

Advanced Management

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European Common
Market—Test Of
U.S. Management

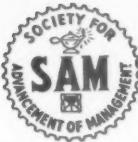
Program Evaluation
and Review

Technique (PERT)

... A Case Study Application
With Analysis

Power, People, and
Performance
Reviews

July
—
August
1961



Advanced Management

Progress Through Enlightened Management

CONTENTS

European Common Market—

Test of U.S. Management by WALTER MITCHELL, JR. 4

Why and how the coming competition from Europe's manufacturers will affect every manager and employee in the U.S.

Program Evaluation and

Review Technique (PERT) . . . A Case Study

Application with Analysis by DAVID G. BOULANGER 7

Exhaustive and scholarly review of techniques being developed to strengthen the weakest phase of the classic management cycle: the evaluation phase.

Power, People, and Performance Reviews by ROBERT R. BLAKE and JANE SRYGLEY MOUTON 13

The author explores the range of supervisory practice from absolute dictatorship to complete permissiveness, and its significance in performance appraisal and motivation.

Mary Parker Follett: Philosopher of Business by ROBERT J. DAIUTE 18

A pioneer analyst's views re-examined in the light of current management philosophy and practice.

The First Law of Management Audits by ROBERT MCQUIE 22

For most effective results, the management auditor should focus on problems that hold most interest for the executive.

Bureaucracy, Command, or Management by Lt. Comdr. ROBERT J. MASSEY, USN and WAINO W. SUOJANEN 24

This article analyzes the "logics" — of command, of rules, and of objectives — which guide a man's actions in an organization.

Economic Factors in Business Planning by MURRAY L. WEIDENBAUM 28

How the business economist participates in management planning and contributes to the stability of production and jobs.

Speed Reading for Industrial Personnel by PETER J. HAMPTON 32

Deals pointedly with the problem any manager must contend with in reading; namely, volume *vs.* time.

Appraising the Work of Supervisors by JAMES M. WHITE 36

How a foreman incentive plan was revised to provide better motivation and more receptivity to change.

S.A.M. Editorial

Management Bookshelf

Provocative Letter-to-Editor Department

... Teaching Machine . . . Bids Fair to Revolutionize Job Training

✓-List for Future Events

"One-Third of Job Titles, Training Attitudes, Hiring Methods, Application Blanks Are Now — or Soon Will Be — Obsolete," Say Arthur J. Miller and Bernard Haldane

U.N. Recruits Management

University Division News

"Through research, discussion, publication, and other appropriate means, to conduct and promote scientific study of the principles governing organized effort in industrial and economic life . . . for the general betterment of society . . ."

—S.A.M. CONSTITUTION

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THIS month's ADVANCED MANAGEMENT carries an article on the surging growth of the European Common Market. It describes some of the far-reaching consequences this event will have. The article also emphasizes that many managers on this side of the Atlantic know too little about the European Common Market, or underestimate its significance.

What is the meaning of this development for American managers? Perhaps the most obvious consequence will be the growth of economic competition beyond anything we have experienced. Such competition, of course, is decidedly in the tradition which is part of our growth. Difficult as the challenge may prove to be, our leaders in business and industry will face up to this new fact of life — and will take the necessary steps to meet the competition.

Already both management and labor in this country have been forced to look sharply at practices which may hinder us in meeting the new competition. This is a healthy result. If the European Common Market leads U. S. enterprises to raise their own productivity and to expand their operations into Europe, these developments also may prove beneficial to all.

However, the growth of the European Common Market has significance beyond its economic impact on American producers. It represents a mighty step forward toward unity in Western Europe — a goal long sought by wise statesmen and actively opposed by leaders of the Communist world. Russia is said to fear the unity of the West even more than the atom bomb. In the long run, the breaking down of old walls between Western nations which inevitably has accompanied the creation of a common market, may prove to be a decisive event in the world-wide ideological struggle.

Salvador de Madariaga, in an interview printed in the *U. S. News & World Report* for June 19, 1961, made this penetrating observation: "... We understand liberty, but we don't understand unity. The other side understands unity but doesn't understand liberty. I think victory will go to the side that first understands both." If, within the framework of economic liberty, the nations of the West can forge enduring unity, they will go far to stop the spread of Communism.

The European Common Market is a powerful new force to reckon with. Some men will fear it. Others will fight it. But men with understanding and far sight will see it as a forward step in history.

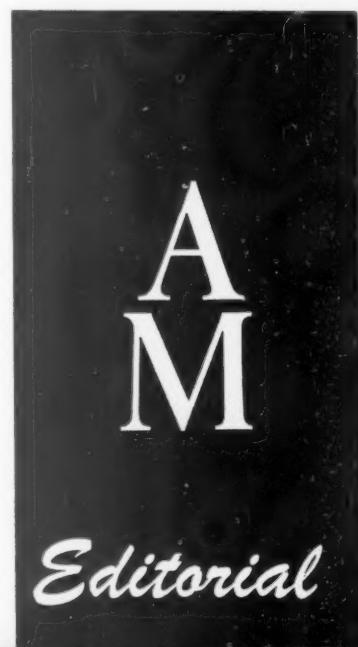
— C. W. H.

- The July and August issues of Advanced Management appear jointly —this once—to enable us to inaugurate an earlier publishing date for further issues.

Big Issues

Demand

Big Men





- From five weeks of observing, listening, talking, and discussing Europe for S.A.M. this Spring, the author writes of a development that deserves to capture the attention of every manager.

by Walter Mitchell, Jr.,
A M Editor in Chief

EUROPEAN COMMON MARKET— Test of U. S. Management

Nations of Budding Euromart — in Moving Up on Their Economic Potential at Home, Abroad — Can Severely Shake U. S. Competitive Posture, Standard of Living, Institutions

Mr. Mitchell, S.A.M. executive director, was, variously (1935-'46), director of marketing and research, assistant to the president, and associate editor of *Dun's Review*. Subsequently, he became vice president of *Irving Trust Co.*, N.Y.C. A consultant in management planning—marketing function included—he served numerous, diverse manufacturers, plus having been distribution economist at *Allied Hq.*, No. Africa. Educator and administrator in the management development program, *Case Institute of Technology*, he has authored a book and many articles.



to management, the full significance of which we have not yet realized.

One can study the "blueprint" and read articles describing the theory of this development without visiting Europe. But its economic significance may not fully come home. To me it did not—until I was on the scene. I recently completed five weeks of conferences, seminars, and private discussions with industrialists, leaders of management associations, and faculties of schools of business in Europe. These have made this development come alive and have underlined its significance.

Size of the Market

The present Common Market countries — Netherlands, Belgium, Luxembourg, West Germany, France, and Italy—total about 175 million people, almost the same number as in the United States. These are educated, literate people

IN TERMS of its meaning to every manager and every worker in the United States, what may well be one of the greater changes of our lifetime is now developing in Europe. It will affect our standard of living, the competitive position of our industries, and the future safety of our freedom and democracy. It will have effects second only to those of World War II. I refer, of course, to the looming strength of the European Common Market (Euromart). It presents a challenge

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with a living standard second only to that in the United States and an aspiration for a better life. This is quite a different thing from an equal number of people in old Russia or present-day China, when it comes to forecasting the speed with which economic development can take place.

In addition, Britain, Turkey, Greece, Spain, and the Scandinavian countries are actively negotiating to become a part of this Common Market. If and when they are included, the Common Market will take in about one quarter of a billion people—substantially more than live in the United States.

Producers of all sorts of goods in Europe can afford shortly to tool up their plants and production lines for mass output such as has made for prosperity in this country. But they can operate these plants at less than half of our wage costs for several years, even allowing for the upward thrust of wages that is occurring—and will intensify—in Europe.

The Challenge to U.S. Management

Moreover, our ancient and reliable defensive weapon, the protective tariff, is no longer able to protect us from this potential competition. Unfortunately, these very same countries (plus Japan) which constitute the greatest competitive threat, are also our best customers for manufactured products, plus cotton, coal, wheat, and other agricultural and natural resources. We are subject to 100 per cent, or greater, reprisal on any effort to protect our industries by tariffs. This has never before in our history been true.

Furthermore, I got the impression during these conferences that Europeans both in and outside the Common Market area realize the possibilities more fully than we do. They are making better preparations to take advantage of those possibilities.

Management Attitudes in Europe

Every one of the management associations and universities for whom I conducted seminars reported an upsurge of interest in better management; they realize that mass production and mass marketing for this size of population present new and more complex management problems for which they must prepare.

In the Netherlands, for example, the East Indies have been written off as lost. They are not crying over spilled milk. Instead, they are making intensive efforts to lay plans for the effective marketing of their agricultural and manufactured products throughout Euromart. Our seminars at Rotterdam, The Hague, and Amsterdam were well attended, and the questions were vigorous and penetrating:

"How do U. S. manufacturers keep their executives' minds open to new ideas?

"What do you consider reasonable lead-time on planning capital expenditures — 2 years, 5 years, 10 years?

"How has management in the U. S. been able to develop such close working relationships with universities — a liaison generally lacking in Europe?"

The prosperity of West Germany is well known. Their products are already widely marketed in the Euromart area. Gradual reduction of tariff walls merely means a decrease of obstacles rather than any basic change in method.

Remembering the history of the automotive industry in



the United States, and hoping to avoid an excessive number of makes and models, a French manufacturer has licensed his popular models for manufacture in Italy. He thus obtains additional plant capacity and local political good-will as a head start in reaching that part of the Common Market.

In all of these countries, new plants are springing up, mainly single-floor operations in suburbs, with easier highway and rail access—much the same development we have seen here. It generates better working conditions, and provides strong impetus to the sale of motor scooters and automobiles to bring the workers to these plants from surrounding suburban residential areas.

Turkey, still surging forward economically on the momentum given it by their national hero, Kemal Ataturk, is convinced that industrialization is the key to prosperity. They realize the need for better managers. The seminar in Istanbul drew about 50 vigorous and able men already doing a good job, but convinced that they can learn additional viewpoints. An even larger number, about 70, turned up on my day in Bursa, a small resort town in Asia Minor

selected by the Turkish Chamber of Commerce and our State Department for a jointly sponsored 10-day course.

In Spain, General Franco's government sees the importance of better management in industry and has assisted the Federation of Manufacturers Associations, the management groups, and others to establish the *Instituto Nacional de Racionalizacion del Trabajo*.

Similar, and likewise imposing, facilities are to be found in West Germany.



What Can We Do?

On the one hand, no thinking American would want to discontinue the efforts made through our management organizations and our government to share management concepts and know-how with these European countries. The strength of our friends is our first concern; they are our first line of defense against Communist imperialism. (Many of them agree with critics in this country that we have spent too much money on aid to fair-weather friends and neutralist horse traders.)

Admitting that European producers will become more efficient, both by reason of their studies of management concepts, and by greater mechanization made possible through mass production, we still have two important potential advantages if we make use of them:

- The first is that we have capital more readily available and can afford to mechanize and automate industry to cut production costs. This is not generally true of European enterprises. The same availability of capital means that American enterprises can buy or build plants within the Common Market area, and in most countries are being welcomed.

- The second, and probably the greater potential advantage, is the unrealized competence and productivity in our own facilities and workers that can be realized through better management. We have all seen the fantastic gains that sometimes occur — without any change in equipment or methods — by reason of better motivation or working relationships. We have made nowhere near the ultimate progress in the planning of work and in developing the unrealized potential of people.

It is a long continuum between slaves dragging stones toward the pyramids and the creative genius of Leonardo

da Vinci, or of Albert Einstein. As the creative and thoughtful element replaces foot-pounds as the measure of a man's productive capacity, a whip becomes less useful. It is hard to lash a man into devising a better method or into discovering a new chemical compound. Yet many of our authoritarian concepts of management fail to reflect how far man has moved along this continuum — how many of the jobs in industry now require a large element of the creative. To release and use the capacities of people is the challenge for S.A.M. and all other associations, and universities engaged in the effort to help our business enterprises achieve more effective management.

American Plants in the Common Market

It is estimated that about 500 American companies have already built or bought manufacturing facilities within the Common Market area, and many more have made licensing or production agreements with European enterprises in the area. Practically all of our well-known names in the chemical, electrical, and pharmaceutical fields, to name a few, already have thriving operations there and are making plans to take advantage of the potential growth that seems inevitable.

It should be remembered that along with the gradual *reduction* of tariff walls and other economic barriers between the participating countries, there will come a gradual *increase* of the barriers around the Common Market area. This will handicap the importation by them of goods manufactured in the United States.

Back of the decision of many of the American companies is one very simple and significant fact: almost all of Europe is growing faster economically than is the United States. We have already achieved a living standard which makes added growth rather difficult. Evolution of consumer taste may actually decrease industrial output — as in the case of the compact automobile. Europe, on the other hand, has many unsatisfied fundamental needs for household appliances, transportation, housing, plumbing, central heating, and other amenities.

Also, the birth rate in Europe is about 17 per 1,000 people compared with our 25 per 1,000. As one U.S. observer puts it, "We chose moderate economic advance plus a huge baby crop. Western Europe chose rapid economic advance with a much smaller baby crop." Subsidiaries of a number of American companies in the Common Market area apparently have been growing substantially faster than their parent companies in the U.S.

So . . .

Here is an unprecedented economic challenge to American management: to attain greater productivity, and thus maintain the standard of living of American workers during this transition; and to preserve or develop European markets by producing within Euromart. No attempt has been made here to explore other implications of the rise of the European Common Market. However, the economic consequences alone are far-reaching enough to demand the most careful study and attention on the part of managers in the United States.

Please Turn the Page for the Article

by David G. Boulanger

Program Evaluation and Review Technique

• • • • •

... A Case Study
Application
With Analysis



Mr. Boulanger joined General Electric Company in 1952, assuming his present position as Specialist — Engineering Budgets and Measurements in the Missile Production Section of G-E's Missile and Space Vehicle Department in 1957. He is presently implementing the PERT technique on certain R & D programs from which material was drawn for this article. Degrees: B.S., University of Vermont, 1952; currently M.S. candidate at University of Vermont. He is a member of S.A.M.

SINCE the first management "principles" were introduced, most planning and control methods have been predicated on using historical data. Early shop practitioners sought the most efficient utilization of time by employing time-study and task-setting methods based on stopwatch measurement of "past" processes that were physical and finite in character. Few useful techniques have been offered facilitating forward planning of management activities for which empirical information was not available.

Current industrial activities, however, can be summarized as heavily oriented toward research and development. A "one best way" of planning and pursuing R & D projects in terms of most efficient use of time presents some intangibles that cannot conveniently be measured. This growing condition, particularly in defense industries, has prompted the development of a prognostic management planning control method called Program Evaluation and Review Technique, or PERT.¹ This article intends to briefly present the idea of the PERT method in a manner permitting the reader to ascertain its potential usefulness. A bibliography provides source material containing more detailed intricacies of PERT.

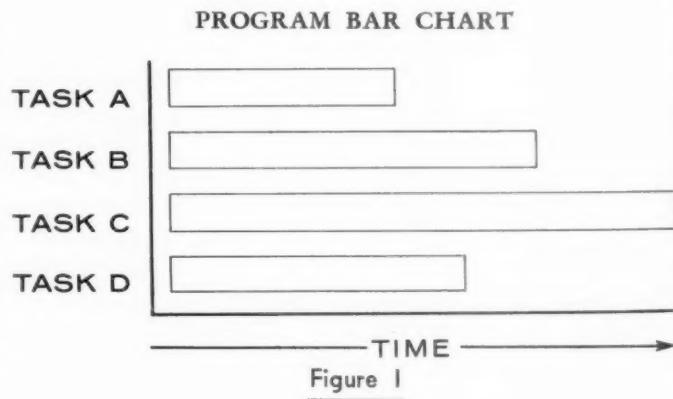
The PERT technique was developed as a method of planning and controlling the complex Polaris Fleet Ballistic Missile Program for Special Projects Office (SP) of Bureau of Ordnance, U. S. Navy. The team consisted of members from SP, the contractor organization, and Booz, Allen and Hamilton, Chicago.² Over-all, PERT appears to be a manifestation of the program concept of management with emphasis on "management by exception", in that potentially troublesome areas in R & D programs can be spotted and action taken to prevent their occurrence.

PERT, as a dynamic program tool, uses linear programming and statistical probability concepts to plan and control series and parallel tasks which appear only remotely inter-related. Many tasks involve extensive research and development which itself is difficult to schedule, least of all to find a "one best way" of doing it. PERT's objective is to determine the optimum way by which to maximize the attainment, in time, of some pre-determined objective that

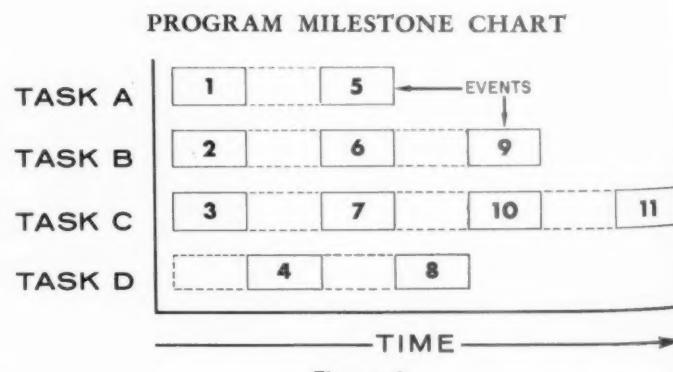
is preceded by a number of constraints — hence its linear programming feature. A measure of the degree of risk is predicted in probabilistic terms to foretell the reasonableness of accomplishment on scheduled time — hence its statistical probability feature.

Program Network Development

The bar chart, presumably derived from Gantt and still widely used, serves to plan the occurrence of entire phases of tasks in series and parallel groups over a time period. Figure 1 illustrates a sample.



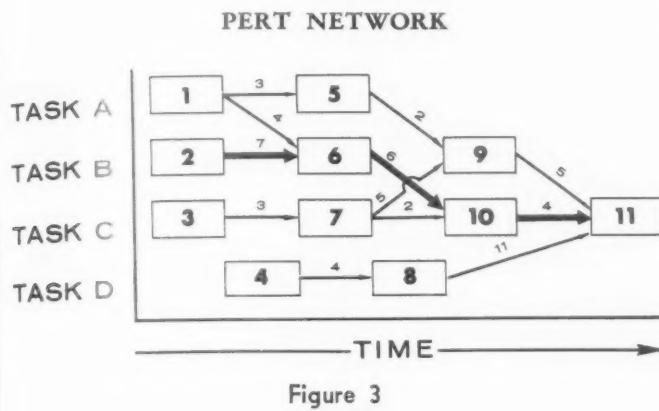
An outgrowth of the simple bar chart, called a "milestone chart," indicates significant event accomplishments as illustrated in Figure 2.



1. Various acronyms are coined (e.g., PEP, PET, etc.) to describe modifications from the PERT method described here.

2. See bibliography Item 5.

Neither technique ties together interdependencies between tasks and significant events. Series and parallel paths should indicate the inter-relationship constraints between events and tasks as shown by the arrows in Figure 3.



A network *event* describes a milestone, or checkpoint. An event does not symbolize the performance of work, but represents the point in time in which the event is accomplished. Each event is numbered for identification.

Arrows connecting events are *activities*, and represent performance of work necessary to accomplish an event. No event is considered accomplished until all work represented by arrows leading to it has been completed. Further, no work can commence on a succeeding event until the preceding event is completed.

If we include in Figure 3 the estimated weeks to accomplish each activity, *e.g.*, $\xrightarrow{3}$, the earliest time objective Event 11 above can be accomplished is the sum of the longest path leading to it. This is the *critical path*, and is identified by the heavy lines connecting Events 2, 6, 10, and 11 totaling 17 weeks. The critical path contains the most significant and limiting events retarding program completion in less than 17 weeks.

But the time required to complete a future task is more realistically stated in terms of a likelihood rather than a positive assurance. To apply this likelihood in a probabilistic sense, three time estimates are stated as a future *range of time* in which an activity may be accomplished. The three time estimates are called *optimistic*, *most likely*, and *pessimistic*. They serve as points on a distribution curve whose mode is the most likely, and the extremes (optimistic and pessimistic) whose spread corresponds to the probability distribution of time involved to perform the activity. It is assumed there would be relatively little chance (*e.g.*, 1 out of 100) the activity would be accomplished *outside* the optimistic or pessimistic time estimate range. Figure 4 illustrates the estimating time distribution for completing an activity some time in the future.

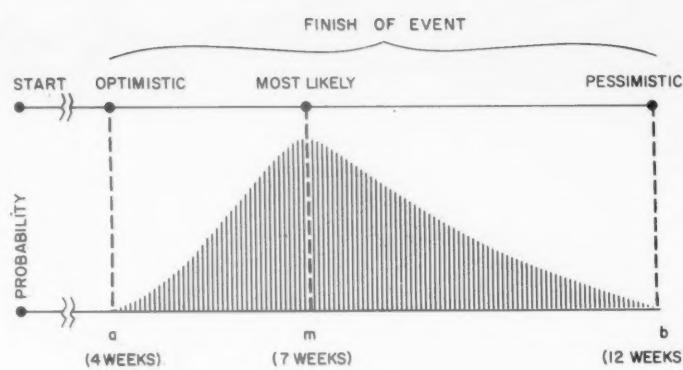


Figure 4

From the three time estimates (*a*, *m*, *b* above), a statistical elapsed time (t_e) can be derived by solving $t_e = \frac{a+4(m)+b}{6}$ for each activity.³ Following this, a statistical variance (σ^2) can be derived by solving $\sigma^2 = \left(\frac{b-a}{6}\right)^2$ for each activity.⁴

Variance may be descriptive of uncertainty associated with the three time estimate interval. A large variance implies greater uncertainty in an event's accomplishment and *vice versa*, depending whether the optimistic and pessimistic estimates are wide or close together. This facilitates evaluating risks in a program network, and using trade-offs in time and resources to minimize risk and maximize more efficient use of "factors of production".

Program Network Analyses

The analytical value derived from any PERT network depends on the configuration and content of the network. Every network should contain events which, to the program team's best knowledge, serve to significantly constrain the achievement of the end objective event. Next, events are inter-connected with "activities" to illustrate their flow and interdependencies. After the network of events and activities is defined, three time estimates for each activity are made.

To illustrate network development and analyses, a hypothetical R & D program is assumed specifying contract completion 11 months (47 weeks) after order. Fixed resources are allocated to the program: *e.g.*, 40-hour work week, given personnel, budgeted money, *etc.* Management now is interested in:

1. What's the one best way of conducting effort toward completion?
2. What's the earliest expected time we can complete the program?
3. What are our chances of completing within the contract limitations of 47 weeks?

3. The elapsed time formula is based on the assumption that the probability density of the beta distribution $f(t) = K(t-a)^\alpha (b-t)^\gamma$ is an adequate model of the distribution of an activity time.

4. The statistical variance formula assumes the standard deviation as $\frac{1}{6}(b-a)$.

The network in Figure 5 is a simplified analogue of our plan to develop a "vehicle armament system". Events are described with a verb in the past tense to indicate their end accomplishment at a fixed point in time.

COLUMN A. Each event is listed beginning with objective event back to the start event.

COLUMN B. The preceding event(s) is (are) listed

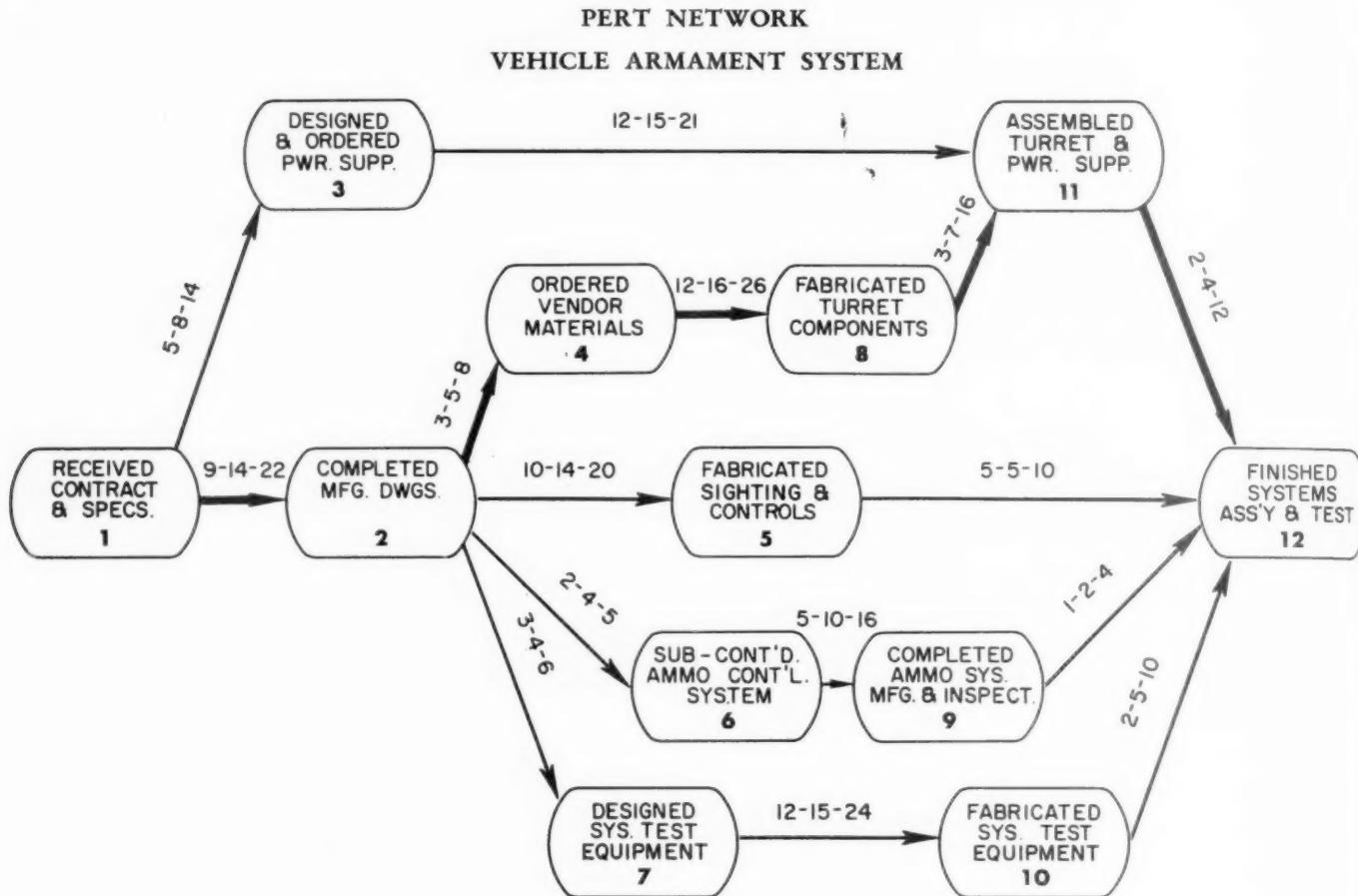


Figure 5

Pert Analyses

A	B	C	D	E	F	G	H	I	J	K	
Event	Pre.Ev.	t_e	σ^2	T_E	T_L	T_L-T_E	T_S	P_R	T_L-T_E	Event	
12	11	5.0	2.78	49.5	49.5	0.0	47.0	.28	0.0	2	
	5	5.8	.69						0.0	4	
	9	2.2	.25						0.0	8	
	10	5.3	1.78						0.0	11	
11	8	7.8	4.70	44.5	44.5	0.0			0.0	12	
	3	15.5	2.25								
	8	4	17.0	5.44	36.7	36.7	0.0		9.5	7	
	4	2	5.2	.69	19.7	19.7	0.0		9.5	10	
	5	2	14.3	2.78	28.8	43.7	14.9		14.9	5	
	9	6	10.2	3.36	28.5	47.3	18.8		18.8	6	
	6	2	3.8	.25	18.3	37.1	18.8		18.8	9	
	10	7	16.0	4.00	34.7	44.2	9.5		20.5	3	
	7	2	4.2	.25	18.7	28.2	9.5				
	3	1	8.5	2.25	8.5	29.0	20.5				
	2	1	14.5	4.70	14.5	14.5	0.0				
	1	—	—	—	—	—	—				

The analyses of the network is next performed and explained below.

beside each event. Hence, there is a succeeding and preceding event for each activity.

COLUMN C. Statistical elapsed time (t_e) for each activity is found by substituting optimistic, most likely, pessimistic estimates for a, m, b and solving $t_e = \frac{a+4(m)+b}{6}$

COLUMN D. Variance (σ^2) for each activity is found by substituting optimistic and pessimistic estimates for a and b and solving $\sigma^2 = \left(\frac{b-a}{6}\right)^2$.

COLUMN E. Earliest expected time (T_E) of accomplishment for each event is found by adding the elapsed time (t_e) of each activity to cumulative total elapsed times through the preceding event, staying within a single path working from "start to finish". When more than one activity leads to an event, that activity whose elapsed time (t_e) gives the greatest sum up to that event is chosen as the expected time for that event. For example, the earliest expected time to accomplish Event 5 below is 10 weeks.

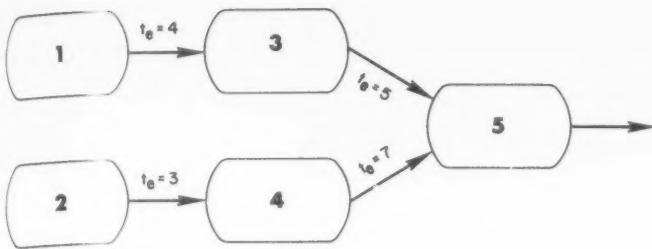


Figure 6

COLUMN F. Latest Time (T_L) for each event is found by first fixing the earliest time of the objective event as its latest time. Next, the objective events corresponding elapsed time in Column C (i.e., 5.0 weeks) is subtracted to find the latest time of the preceding event, staying within a single path working backward from finish to start. When more than one activity leads from an event (while working backwards to determine latest time), the activity which gives the *least* sum through that event is selected.

Some events may be accomplished later than expected time and have no effect on meeting the objective event. Knowledge of "slack" time in a network (i.e., how much and where located) is of interest in determining program effects of "trade-offs" in resources from high-slack to low-slack areas.

Since linear programming theory says "negative slack" is not admissible (i.e., not technically feasible at the objective event assuming fixed resources), we commence from an objective viewpoint to compute "positive" (or non-negative) slack. In spite of theory, a latest time derived from a fixed contractual date *less* than earliest expected time must be recognized to determine how much network "compression" is necessary to meet a scheduled date with reasonable assurance. The theory simply recognizes time is not reversible; therefore, to alleviate "negative" slack one must either extend contractual dates or employ added resources like overtime, more funds, personnel, etc. We assume in our analyses that resources are fixed at inception of program to maintain profit potentials.

COLUMN G. Slack time for each event is found by subtracting Expected Time from Latest Time ($T_L - T_E$). The purpose is 1) to locate the critical path in the network designated here by events having zero slack and 2) to determine next-most-critical paths, as well as those events having substantial slack.

The critical path contains events most apt to be troublesome technically or administratively, and are danger points causing potential over-all schedule slippage. Next-most-critical path(s) is (are) found by substituting next higher slack event(s) into a second single path from start to finish. For example, the second-most-critical path is found by including Events 7 and 10 (whose slack of 9.5 weeks are the next-higher slack event over the critical path events) to give a new critical path described as Events 1, 2, 7, 10, 12. Next-most-critical paths should be observed because their criticalness may be nearly as severe as the original critical path.

By locating events having substantial slack time, it becomes possible to effect trade-offs in resources to those

events having little or zero slack. For example, Events 6 and 9 each have 18.8 weeks slack, meaning their expected time of completion could be intentionally delayed 18.8 weeks without causing slippage in over-all program schedule. A point of optimization in network development is approached when the greatest possible number of events have the smallest possible range in slack from the lowest to highest slack value.

COLUMN H. Schedule Time (T_S) is the contractual date of completion. A scheduled time may also exist for major events within a network, which later facilitates evaluating the range of risks throughout a program plan.

COLUMN I. Probability (P_R) of meeting a scheduled time is calculated to determine feasibility of program accomplishment under the constraints in the network. Generally, probability values between .25 and .60 indicate an acceptable range to proceed with a program as depicted in the network. Probability values less than .25 assume the schedule time, T_S , cannot reasonably be met with the given resources. Values higher than .60 may indicate excess resources "built in" the network, and may warrant consideration for their use elsewhere. Probabilities need not be computed where schedule time — T_S and expected time — T_E are equal, as this assumes .5 or 50 per cent probability of completing on schedule.

Probability of events are computed as follows:

(1) Solve for each event which has a schedule time (in our example, the objective event):

$$\frac{T_S - T_E}{\sigma \epsilon \sigma^2 *} = \frac{47.0 - 49.5}{\sqrt{18.31}} = \frac{-2.5}{4.279} = -.584$$

(2) Refer answer to Area Under the Normal Curve Table and compute probability P_R .

The value —.584 refers to —.584 standard deviations from the mean under a normal curve. Referring to a normal curve table, we find its corresponding per cent of area under the normal curve to be about —.21904. Thinking of area under the normal curve and probability as synonymous, we subtract —.21904 from .50000 (the mean of a normal curve) to derive a probability of .28906, or 28 per cent. Explained, there is a 28 per cent chance of meeting the schedule time of 47.0 weeks, and hence may be "acceptable" to proceed with the program under plans and resources factored in the network. Any standard of "acceptability" in probability terms should be flexible according to the importance of a program and the consequences if schedule time should not be met. Therefore, any probability value attached to a program plan should be viewed and used cautiously.

Diagrammatically, 28 per cent probability is roughly represented by the shaded area under the normal curve below.

* Read as "standard deviation of the sum of the variances". In our example, this is solved by: 1) finding the sum of the variances (σ^2) for the events in the Critical Path, that is $4.70 + .69 + 5.44 + 4.70 + 2.78 = 18.31$; 2) finding the square root of $18.31 = 4.279$. Probability for *any* event in a network can be computed if a T_S and T_E value is known, and by finding that event within a single network path.

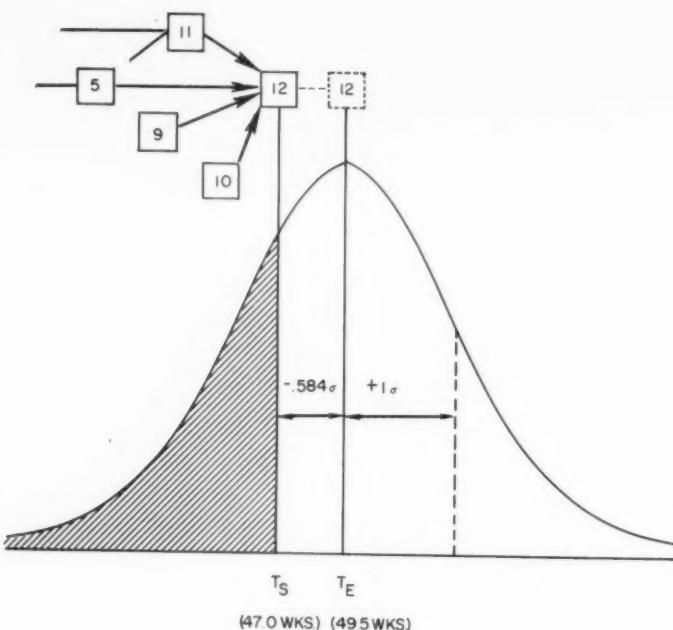


Figure 7

COLUMNS J and K. Under Column J is the ascending order of slack, and under Column K their corresponding event numbers. This brings out the Critical Path as 0.0 slack events, next-most critical path(s), and those events or paths with high slack from which resources and time may be deployed to events having zero or low slack. This facilitates locating the "one best way" of reaching the objective event in relation to time.

Re-evaluation and Optimization

A potential value from PERT at inception of an R & D program is the opportunity it affords to introduce revised constraints into the plan and then simulate its outcome. If repeated, the optimum network can be sought, its troublesome areas located, and various tasks set under optimum conditions before time, cost, and performance were expended. Computer programs are available to expedite this, but manual methods are economical for networks up to 200 events depending on complexity of event inter-relationships. Various schedules and performance reporting formats can be developed from the analyses for team use and management analysis.

Two advantages from PERT are 1) the exacting communications it offers to participants in a program and 2) its use as a planning foundation to support bid proposals. Each participant can see his relative position and understand the timing and relationship of his responsibilities to other participants on the program team. Often the intangibles and assumptions that plague accurate bid proposals are brought out when supported with a PERT network and analyses.

Using PERT for Resources Planning, Cost Analyses*

Considerable study is reported with PERT applied to resources (manpower and facilities) planning. Introducing a second variable to create a simultaneous two dimensional model whose objective functions are to be optimized — while their preceding constraints are being manipulated (at

the same time satisfying various restrictions placed on potential solution) — will be more difficult to perform, and probably involve more elaborate procedures.

Some work is reported with PERT applied to cost analyses of a program (presumably assuming a three or N-dimensional model with variables of time, resources, cost, *et al*). It appears the object would be something analogous to predetermining that point on an average total cost curve where marginal cost intersects marginal revenue — hence, maximization of profits. Some suggestions have been offered relative to the "assumed" linearity between time and cost, in the duration of a program, but this needs clarifying before concrete methods of planning costs by PERT can be formulated.

* Notes from American Management Association Meeting, Saranac Lake, N. Y., March 27-29, 1961.

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POWER,

PEOPLE,

AND

PERFORMANCE

REVIEWS

How Superior Wields Power, *Degree of Subordinate's Participation in Setting Pathway to Goals* Key to *Kind* of Morale, Responsibility—Efficacy

by Robert R. Blake and Jane Srygley Mouton

HOW DOES a person in a supervisory position who is expected to direct, regulate, guide, manage, or control, do so? One way of formulating the issue of "What makes a good supervisor?" is to examine the manner in which he uses the power of his position. What are the consequences of tight control, sharing power with his subordinates, or a loose-rein approach to exerting authority for both supervisor and subordinate?

Power Spectrum in a Collaborative Work Setting

The question can be phrased, "How much weight does the supervisor exercise on decisions made by himself in concert with his subordinates?" When the work system is collaborative, as is generally the case, let the total power to determine any specific decision be equal to one (1 unit).

In the power system in Figure 1 the extremes of an imbalance of control occur at the ends of the continuum. At the extreme left within the *Collaboration* area the person in the formal position of leadership, the supervisor, actually

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wields all (1) of the weight of a decision. The subordinate in no way determines the outcome. Call this a 1/0 system. A person who manages in this manner nowadays frequently is called a "dictator," "Little Caesar," or just a plain, hard-nosed S.O.B. At the extreme right, no weight whatsoever is exercised by the person officially designated as the supervisor. The subordinate makes the decision. The supervisor is a person in "name" only and functional power is in the subordinate's hands. The power ratio here is 0/1.

The distribution of weight between a supervisor and a subordinate can fluctuate between 1/0 and 0/1 and still be within a framework of collaboration. It can be .8/.2, or

THE POWER SPECTRUM

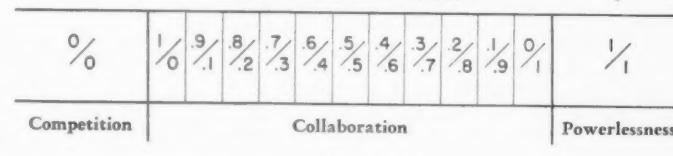


Figure 1

.7/.3, or .5/.5, or .4/.6 and so on. Actual stable power relationships within a work setting are most likely to fall between the .9/.1 and the .6/.4, or .5/.5 portion of the spectrum, but it is possible for the ratio to shift, depending on the persons involved, the ability factor, the "tradition" in the organization, and the decision to be made.

Extension of Power Spectrum

The spectrum can be extended at either end, so that the amount of power in it is more or less than 1.

Competition—When each person seeks to achieve or to retain the total decision-making weight in the system so that more than a unit of strength is exerted on the outcome, then the relationship is competitive. Two persons, each attempting to exert one unit of weight, are competing and are vying with one another. Each seeks to force compliance on his adversary. Neither is willing to accept influence from the other, so that one side succeeds only when the other fails or capitulates. This is competition in the fullest meaning of that term.

Powerlessness—The scale also can be extended at the right extreme of Figure 1, to a point where *no* weight whatsoever is available to be distributed. This approaches an 0/0 situation or one of *Powerlessness* where the total weight in the situation is less than unit strength. A fully developed bureaucracy, for example, is close to an 0/0 situation. In disaster situations, no one has power to influence others, but more than that, the old rules governing relationships are inoperative or disregarded for a period of time. The famous Cocoanut Grove fire, where 500 people died due to chaos ensuing from excitement and danger is an example in point.

Use of Power in Work Relationship

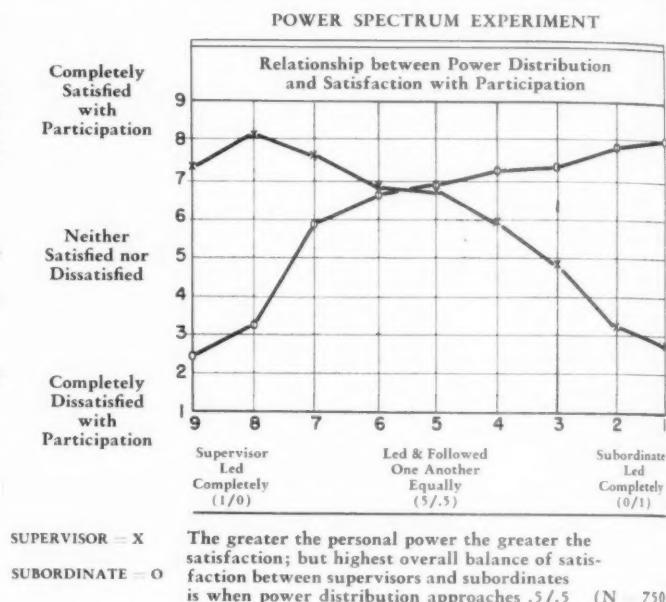
In the work setting the strategy of *how* power is used can be analyzed according to this method, where the situation involves two people, a small group, any two groups, or the organization as a whole.

The first experiment to be reported is concerned with three power styles in the setting of a supervisor-subordinate relationship. Each subordinate has problem-solving conferences with three different supervisors. These conferences are for the purpose of getting a joint ranking of nine different items on improving management. Resolving differences between the supervisor and the subordinate in making these rankings provides the basis for interaction.

Although subordinates were unaware of it, supervisors were instructed to vary their behavior for each interaction. One time the supervisor grasped the power and dominated the outcome as much as possible in a 1/0 manner. In a second pairing he assumed a joint-determination or truly collaborative orientation (.5/.5) and rubbed ideas with his subordinate in a give-and-take way until a mutually acceptable ranking of the items had been achieved. During another interaction, he avoided influencing the subordinate's opinions in any way in the effort to relinquish his personal power to the subordinate (0/1). After each interaction,

both supervisor and subordinate described their reactions by checking scales concerned with leadership, satisfaction, and responsibility. Reactions from hundreds of supervisor-subordinate pairings to different degrees of power exerted by the supervisor are summarized in figures below.

Power and Satisfaction—The relationship between power and satisfaction is shown in Figure 2. The trends for both supervisor and subordinate tell almost the same story. No matter what your title, the amount of weight you have in determining the decision dictates your satisfaction with it. When either a supervisor or subordinate controls the weight,



The greater the personal power the greater the satisfaction; but highest overall balance of satisfaction between supervisors and subordinates is when power distribution approaches .5/.5 (N = 750)

Figure 2

he is most satisfied. As he relinquishes power, his satisfaction decreases. The only difference between a supervisor and subordinate in this experiment is that it takes a greater amount of power for the supervisor to tip the balance on the side of satisfaction.

Highest satisfaction, then, for either the supervisor or subordinate, is found where one or the other member controls the power. The satisfaction of one is at the expense of dissatisfaction of the other person. The most nearly *equal* amount of satisfaction for both supervisor and subordinate, with a moderately high level of satisfaction, is found at the positions in the middle of the power distribution, especially .6/.4 and .5/.5.

Power and Responsibility—The general finding relating power to responsibility is that feelings of responsibility of *both* supervisor and subordinate are at a peak near the .5/.5 power position on the spectrum. When the balance is in favor of either member of the pair, responsibility on the part of both decreases, but the decrease is more rapid and dramatic for the member of the pair who *loses* the power. The greater the imbalance, the lower the feelings of responsibility by either the supervisor or subordinate.

One significant difference between supervisors and subordinates is that at no point do supervisors feel a *lack* of responsibility, or a rating of less than five on the responsibility scale. Degree of responsibility varies from an inter-

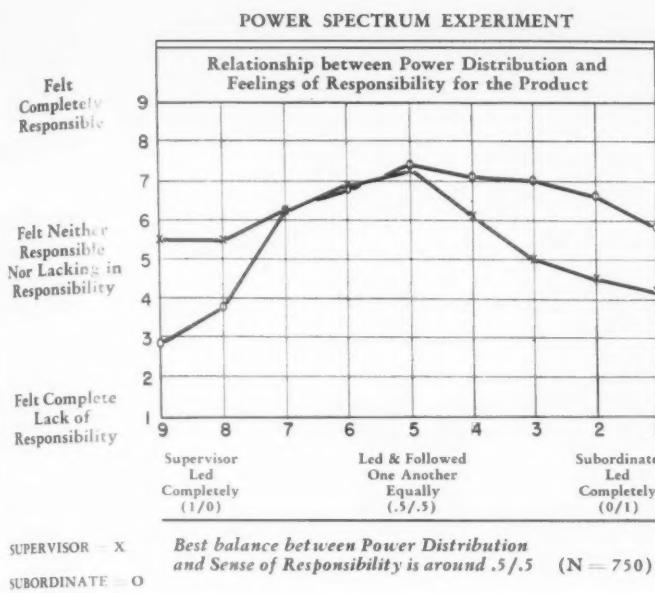


Figure 3

mediate amount to almost complete responsibility. By comparison, subordinates *do* react with feelings of *lack* of responsibility which are related to the balance of power. Indeed, when the balance of power is *quite* unequal, and with heavy weight on the supervisor's side, the subordinate feels very little responsibility for accepting the opinions of the supervisor. Only when power is shared, or when it is close to a joint relationship, does the subordinate accept full, or close to full responsibility.

Summary

The application of the various positions on the power spectrum can be summarized by saying that as you move away from emergencies into activities where individuals have greater personal skills for handling the situation you move from 1/0 toward 0/1. As the problems change, the appropriate power distribution shifts. In between the extremes, many situations exist where a .5/.5 approach is optimal.

In addition to the reasons already given, such as a high degree of satisfaction and high feelings of responsibility associated with it, a .5/.5 situation is a learning situation *par excellence*. It means that as people go about making decisions they are virtually automatically teaching one another. You can argue that an organization moves toward success in close parallel with the extent to which it teaches people the skills of collaboration, when it's desirable, and self-reliance, when it's possible.

The thesis which emerges is that the way a supervisor employs his power *determines*, in a significant degree, the manner in which his subordinate reacts to him and to the work situation. The evidence we have reported, which is also supported by a massive array of psychological experiments, leads to a single but solid conclusion. For both members of the pair who are relatively equal in terms of ability and who stand in an hierachial relationship to one another, a .5/.5 power relationship is most satisfactory. A higher morale and greater responsibility is produced than in either a 1/0 or 0/1 power relationship. The path leading to im-

proved supervision is clear for anyone who wants to take the journey.

Use of Power in Conducting Performance Appraisal

Another area of supervisor-subordinate relations involves the sphere of performance appraisal. Here, too, issues of power would be expected to be significant, for in the interests of consistency, if for no other reason, a supervisor will act much the same toward a subordinate, whether in terms of work direction or performance review.

There are at least two well-defined approaches to performance review. Each has provoked controversy by stirring up dissention or support (Blake, 1958; Kelley, 1958; McGregor, 1957; 1959; Whisler, 1958). One is the conventional approach, which is usually a periodic, formal summary by the supervisor of the subordinate's performance. It says, "Tell your subordinate what you want him to do and hold him to it. Evaluate his performance according to how well he carries out his assignments and then tell him how well he's done, or what he's got to do better." The other, a collaborative interview between superior and subordinate based on a goals system is oriented toward mutual goal-setting for future performance. It says, "Establish objectives with your subordinate and develop agreements with him concerning a mutually acceptable time perspective for reaching them. Schedule review periods to assess progress and then revise the objectives, or the schedule, or both, in the light of actual accomplishment. Jointly evaluate blocks to progress with the idea of eliminating them!"

Power as the basis of control and change produces very different performance results than does goal-setting as the basis for control and change, as shown in the experiment reported below. Conclusions are clear-cut and merit serious attention from any manager who is genuinely interested in improving the quality of his supervision.

In the following experiment, the ratings vs. the goals methods of performance discussion were evaluated.¹ Against the perspective of the power spectrum, the ratings method should be more of 1/0 power relations because the evaluations are entirely in the hands of the supervisor with little participation from the subordinate except to "take it". On the other hand, when both members of the pair are collaborating in a common search for solutions to problems as under the goals method, power employed by the supervisor is more congruent with a .5/.5 distribution. The two approaches, then, can be characterized as "tell and sell" vs. "give and take."

The Experimental Situation

Each participant is cast either as a supervisor, "Bob Hayes," or as his subordinate, "Fred Winters". Instructions

1. The experiment evolved from a demonstration exercise on goal setting at The National Training Laboratories Management Work Conference at Arden House in 1957 produced by Douglas McGregor of Massachusetts Institute of Technology and Richard Bechard of Bechard Associates. The ratings method, which was used as the basis of comparison, is a standard procedure employed by a large American corporation and suggested by Edward Mumma, School of Business Administration, The University of Texas.

are given each supervisor before he conducts two performance review interviews, one according to a ratings approach and one using the goal-setting procedure, each with a different subordinate. Thus in the course of the session each person, whether supervisor or subordinate, has the opportunity of contrasting the two approaches to performance appraisal. A rating form characteristic of that used by many organizations is given to each participant to use as the basis for the typical ratings type of performance appraisal.

A sample interview outline is provided for use in the goals method. Under the goals approach Bob and Fred agree a week in advance on the areas of performance that they want to discuss in terms of diagnosing Fred's situation and defining goals which, if acceptable, will forward the situation. During the interview both supervisor and subordinate work toward establishing *mutually* acceptable goals from their individual suggestions and toward a time schedule for achieving them.

After each interview, both supervisor and subordinate respond with quantitative reactions concerning their feelings toward the two kinds of interviews. These reactions are summarized below.

The actual power distribution as experienced by supervisor and subordinate is shown in Figure 4. The ratings approach is experienced by the supervisor and the subordinate as being under the control of the supervisor. Both agree that the power distribution is close to 1/0. Under the

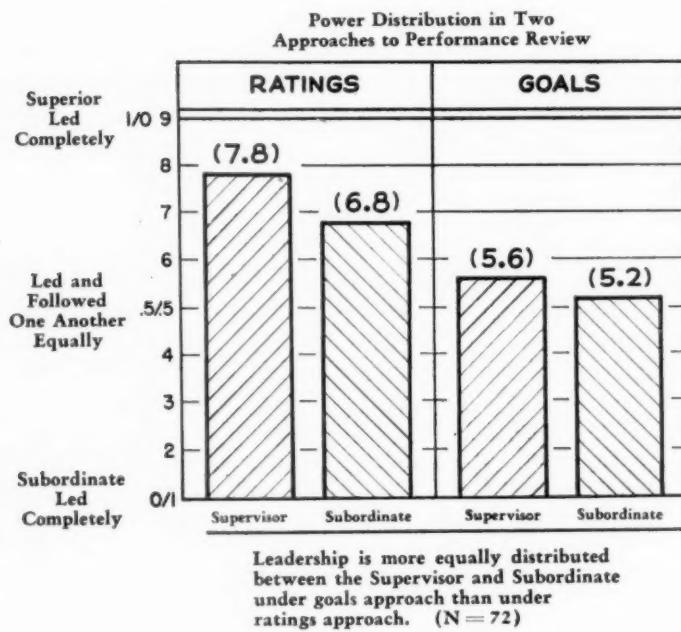


Figure 4

goals approach, leadership is more equally distributed, approaching a .5/.5 or give-and-take relationship. Supervisors are *not* instructed to act in a 1/0 manner when using the ratings system; neither are they coached to use a .5/.5 approach in the goals system. The results indicate that the systems themselves contain power assumptions. Using a ratings scale, it is extremely difficult to evaluate a subordinate and then to bring him into a discussion of the ratings

without exercising power in a 1/0 direction. If the rating is not positive, too frequently what starts out as a 1/0 interview ends up as a 1/1 fight. In contrast, focusing on goals leads to an examination, in a give-and-take way, of the problems at hand, without the feeling that the subordinate is being judged.

Great importance should be attached to the sheer fact that the ratings format as traditionally employed dictates the outcome in power terms. If for no other reason than the results reported here, the flowery language describing a ratings system contained in current management textbooks should be viewed with caution. Too often a textbook is a cookbook telling "how to do it," and remaining silent concerning the hidden dynamics of the relationship.

"Teamness"—Predicting from the results reported earlier in connection with the power spectrum, it can be anticipated that a greater sense of "teamness" will be aroused under the goals than with the ratings system. Figure 5 represents ratings of sense of teamness felt by the supervisor and subordinate. These data represent the emotional attitudes toward the two approaches to performance discussion.

As shown in Figure 5, feelings of separateness develop

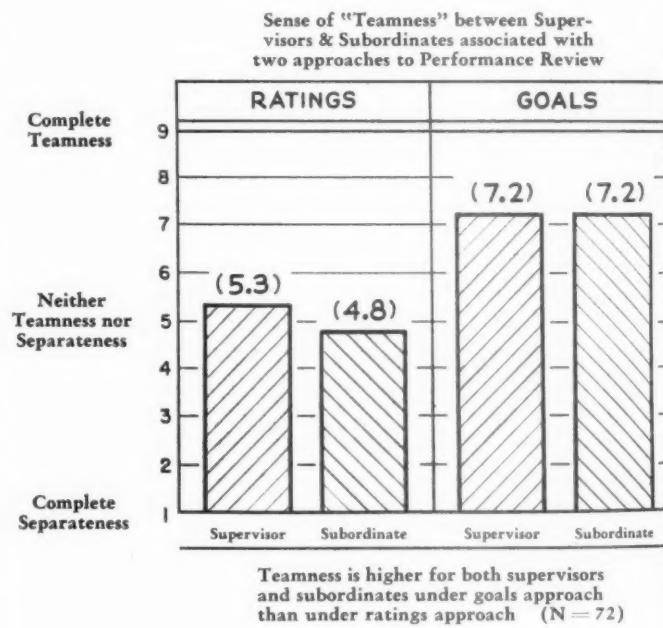


Figure 5

between the members of the pair in the ratings interview. By contrast, a relatively high sense of teamness is reported by both supervisor and subordinate under the goals approach.

These reactions show that the ratings method results in a feeling of isolation between people; that is, it makes them feel individualistic and distinctive rather than as team members. Instead of pulling together, the power imbalance results in their pulling apart. The goals approach, by comparison, binds supervisor and subordinate together through their searching for solutions to shared problems.

Satisfaction—Satisfaction follows along the same lines as teamness. Performance appraisal under the ratings approach elicits neutral attitudes as shown in Figure 6. In the goals

Satisfaction from two Approaches to Performance Review

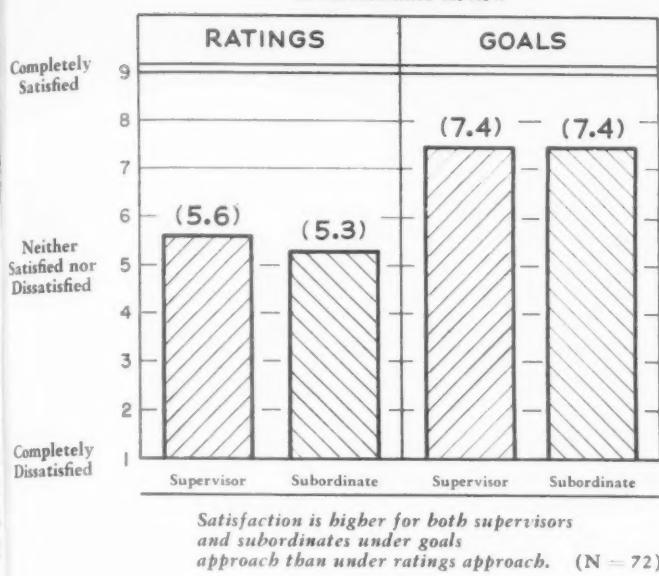


Figure 6

approach, however, discussion is felt to be very satisfying, both to the supervisor and to the subordinate. The most logical generalization is that when a supervisor and a subordinate work together in the pursuit of common goals they find satisfaction in the effort expended. Here again, the results establish that a relationship based on goals accomplishment produces a healthier and more collaborative basis of association than does the classical ratings method.

Responsibility for Change—Under the ratings approach, which is close to 1/0 on the power distribution, differences in feelings of responsibility are associated with power imbalance in Figure 7. The supervisor feels responsibility for the subordinate to change; the subordinate does not!

Responsibility for Change felt under Two Approaches to Performance Review

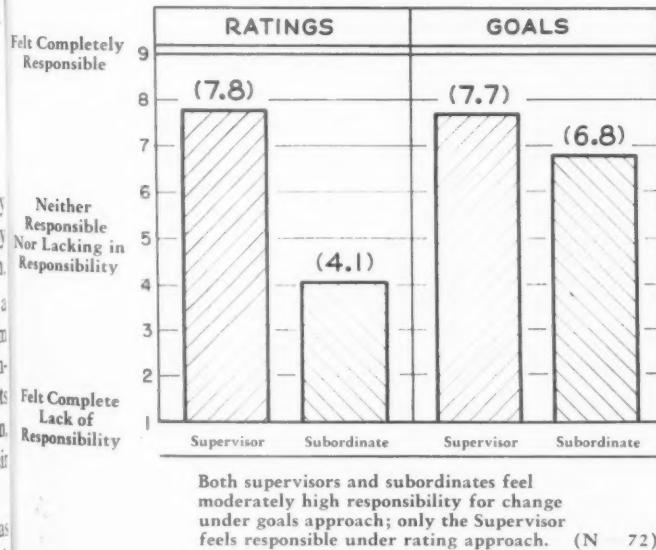


Figure 7

There are no real differences in feelings of responsibility between the ratings and the goals method for the supervisor. Feelings of responsibility for change on the part of the subordinate show a difference which is related to the approach used. There is a real shift upward toward accepting responsibility on the part of the subordinate under the goals system. This finding is particularly significant for it provides a distinction between the members of the work pair. It says that amount of responsibility felt by the subordinate flows with his sense of power to influence the definition of his own situation. Another way of saying it is that a supervisor cannot dictate responsibility for change. In the final analysis he can only create the conditions under which responsibility is experienced!

Here is a paradox. Under the ratings approach, the subordinate, who is being counseled to change, feels little responsibility for changing, while the supervisor, who is counseling for change, feels a great deal of responsibility for getting the subordinate to shift his behavior. What could be more frustrating than a situation in which a supervisor feels responsibility for a subordinate, with the subordinate feeling reduced responsibility for his own behavior?

On the other hand when the goals approach is used, both supervisor and subordinate feel a moderately high degree of responsibility for change. When power is shared, as it is in a .5/.5 situation, the basis for control is *mutual effort*, not *directed effort*. Mutuality of interests generates joint responsibility, whether on the battle lines or on the workbench!

Summary

This concrete application of power theory to the specific two-person relationship of performance review says that the way a supervisor thinks of himself and utilizes the power available to him in working with subordinates makes a considerable difference. Used one way, he gets one set of results; used another, he gets a different set. Every man must decide which way to go, but the results here are sufficiently dramatic to give one cause for thought if he is using a ratings system of the kind described. Under the ratings system, control and power remain with the supervisor; responsibility for change resides in the hands of the supervisor who is prodding for it rather than springing from the subordinate who should demonstrate it. The findings presented here from two experiments speak for themselves. "If you want constructive results that lead to satisfaction, teamness, and feelings of responsibility in your subordinates, move in the direction of a .5/.5 goal-setting relationship with them." The data indicate that a choice must be made. You can go either way: tell-and-sell or give-and-take. It is an important choice.

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Mary Parker Follett: Philosopher of Business

**Found 'Deceptively Simple' at First, Her Integrative Tenets
Have Deep Meaning for Management on Re-examination**

By Robert J. Daiute

MARY PARKER FOLLETT ranks as one of the most profound philosophers on business management. Her thought appears to be deceptively simple when first examined. She applied the concept of integration to many facets of the business enterprise. She called for originality in thinking. She rejected the notion that automatic forces of the market — everyone but no one — co-ordinated internal as well as external affairs of the firm. Rather, a unity of the whole firm and adaptation to the environment could be obtained only through executive choice among alternatives.

Integration: Follett Examples

Many illustrations were given by Miss Follett. Some were drawn from non-business contexts. For example, she told the anecdote of two women in a library room. One wished to open a window in the room in order to get fresh air. The other wished to close the same window in order to avoid a draft. Both women got what they really wanted when they agreed to open a window in an adjoining room. The two came to recognize that a third alternative existed when at first they could see only two mutually exclusive alternatives. An integration was gained since each had her real interest served. Neither one scored a victory over the other; there was no compromise either.¹

In another context, the proper location for a loading platform was an issue confronting a dairymen's co-operative. There were two groups at odds. The first group of dairymen reached the warehouse from one direction and wanted the platform located at the side facing the first group's approach. The second group wanted the platform to face its approach from a different direction. An integration was achieved when two platforms, not just one, were built with one at each place desired.²

1. Follett, Mary Parker, *Dynamic Administration* (edited by Metcalf and Unnich), N. Y.: Harper and Bros., 1940, p. 32.



When she looked at the business context, Miss Follett devoted special attention to how the functional specialists in purchasing, manufacturing, selling, accounting, and other departments could be co-ordinated. She believed that self-co-ordination offered great possibilities. The specialists can co-ordinate themselves if they conduct joint studies of mutual problems, as in committees, or in more informal ways, and find out how to integrate their functions as well as themselves. One functional specialist, for example, a department head, ordinarily lacks the formal authority to order another department head to do something. Instead, reliance is placed on their joint skill to determine what is required by the situation, to obey that, and thereby to co-ordinate their functions and the whole enterprise. The process of integration provides unity for the enterprise even in a dynamic situation.

Illustration from Sears

The case of Sears, Roebuck and Company might be cited to illustrate the nature of an integrated organization, in the sense in which integration is used here. (Miss Follett, herself, did not cite Sears, Roebuck.) When Sears, Roebuck was first set up, it was oriented to the rural, or farm market. Farmers, the buyers in the market, had little mobility and low income. To sell in this untapped market, Sears distributed mail-order catalogues, shipped by mail and developed efficiency in filling orders. In turn, Sears placed large orders with suppliers so that they could operate at full capacity and low unit cost. Cost savings were passed on to Sears and its clientele in the form of lower prices. It can be seen that a harmony among purchasing, selling, and distributing functions provided a unity that enabled the firm to serve its market effectively.

Later, when automobiles gave the farmer the ability to go to town to shop, Sears, Roebuck established retail outlets. These stores often were located outside the core of retail trade in a town so that parking space could be furnished.

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The stores anticipated the shopping center of today. More recently, Sears has been accepting a larger volume of telephone orders, and planning to sell more services. These latest steps are adaptations to continued urbanization, congested highways, and increased demand for services in our economy. The Sears example shows the importance of harmonizing the functions of the enterprise, and adapting functions of the whole enterprise to changes in the market. Co-ordination of the functionalists leads to co-ordination of the functions and the unity and adaptability of the whole. The Sears illustration shows the type of result obtained from good co-ordination; however, it does not prove that the specialists can gain the co-ordination by themselves.

Superior-Subordinate Relationship

There is not only a need for horizontal co-ordination, but also vertical. That is to say, not only co-ordination of specialists and functions is needed, but also co-ordination of superior and subordinate. Miss Follett's philosophy about business implies a great deal for the relation between superior and subordinate. The proper relation between, say, the accountant and the engineer is the standard for the relation between accountant and accounting clerk, for instance. The superior should not dominate the subordinate. The superior should not pull rank. Requiring obedience to arbitrary order is inappropriate. Instead, the superior and subordinate together should find out what is required by the facts of the situation. An informality prevails, with one's ability to see in an incisive way what is needed — the governing consideration as to whether one's judgment should prevail.

The full import of the foregoing has two chief aspects. One aspect is semantic; the other aspect deals with substantive issues. The two aspects interact. The meaning, or definition, attached to a word is derived from usage. The definition then leads to certain modes of behavior, and so on, around the circle. One way to break into the circle and change behavior is to apply flexible thinking in order to shift the common meaning attached to the key words.

Semantic Shift Explained

Let us turn to an illustration of the semantic shift required. The hierarchical structure and delegation of authority found in the formal organization of a business seem to deny freedom for the subordinate to do what he wishes to do. The magnitude of the matter is seen in perspective when we realize that millions of persons are employed in organizations and that virtually everyone in an organization is in a subordinate position. It would appear that we have here a loss of liberty on a grand scale in the interest of organizational efficiency. In other words, the need for obedience is opposed to individual freedom; the authority of status must be maintained even though it means the exercise of power by one person over another.

Miss Follett has shown that sophistication in defining key terms such as obedience, freedom, and authority will help to resolve the conflict between obedience and freedom. It is possible to obviate the dilemma. Obedience does not

deny liberty when obedience is defined to mean obedience to the requirements of the situation, rather than obedience to another person. If obedience is defined in this way, it is obvious that one can be free and obedient at the same time.

Authority of the Situation

There is no mysticism involved here. Authority is in the situation and in one's ability to see what is in the situation, not in the status one enjoys. If one is able to see how to avoid a draft and yet obtain fresh air in a room, build two platforms instead of choosing between the two, reconcile interest of accountants and engineers, or integrate the functions of Sears, Roebuck marketing, then one should possess authority by virtue of one's perceptiveness. One should have the right to call for action by others. This approach removes arbitrariness from authority, and introduces the "rule of law"—the law of the situation. The dilemmas of obedience or freedom and law or lawlessness are dissolved by shifting the meanings of words.

We can see that the foregoing is concerned with something more than mere juggling of verbal definitions, however. It is concerned with substantive issues as well. These issues are usually seen most clearly in the context of political government, but they are found in business government, too.

Every schoolboy in America knows that arbitrary authority is not to be obeyed, that freedom has been gained only at great cost, and that the rule of law has been established in our country. What every schoolboy does not know is that the same issues are found in business organization, that the issues have never really been settled with finality.

Mary Follett indicates a way of resolving the issues in business. Informality in examining the situation is needed. Regardless of his station, the one with superior insight ascertains what the others should do. It should be noted that this method is actually superior to political democracy because the quality of the perception, rather than the number who hold the view, is governing.

Follett, Barnard Compared

When the Follett treatment of authority is compared to Chester Barnard's theory of authority, the attributes of the Follett approach are underscored. According to Barnard, "authority is the character of a communication by virtue

"... she told ... of two women in a library room. One wished to open a window in the room to get fresh air. The other wished to close the same window ... to avoid a draft. Both women got what they really wanted when they agreed to open a window in an adjoining room. The two came to recognize that a third alternative existed when at first they could see only two mutually exclusive alternatives. An integration was gained since each had her real interest served. Neither one scored a victory over the other; there was no compromise either."

of which it is accepted.³ In other words, the subordinate decides for himself whether he will follow orders, or not. Thus, the subordinate really decides what will be done, and not the superior.

Under Barnard's theory, orders must be 1) understood by the subordinate 2) thought by him to be in line with his personal interests 3) thought by him to be in line with the organization's goals and 4) he must be physically and mentally able to comply. The superior should not let on to the subordinate where the real seat of authority is found. The superior should issue orders that he is sure will meet the conditions for acceptance. And the superior should encourage informal group pressures to operate on the subordinate to bring about obedience. The fiction of superior authority should be preserved for the good of the subordinates who wish to believe they lack authority because they

"In collective bargaining, one party tries to win a victory at the expense of the other; compromise, or splitting the difference, is resorted to. There may not be any real integration of interests of labor and management . . . the parties use economic coercion, bargaining is syndicalistic in tendency, and the union is anti-intellectual and bureaucratic . . . there are times when labor and management see no alternative to coercion of one another, regardless of the public interest, and the union's emphasis on immediate gains and survival prevent it from helping to formulate the elegant solutions to conflict."

do not want responsibility; that is, deceit should be practiced by the executive to mollify the subordinates and gain the goals of the enterprise.

Like Barnard, Miss Follett recognizes the importance of the informal organization. Both of them see what is implied by the psychology of consent — a sense of participation is crucial. But, unlike Barnard, Follett believed the subordinate should be encouraged to play a real role in decision-making. There is no room for deceit in Follett's philosophy of business. She placed a premium on joint discovery of reality.

Collective Bargaining — Some Shortcomings

Mary Follett's views led her to recognize some shortcomings of collective bargaining in practice. In collective bargaining, one party tries to win a victory at the expense of the other; compromise, or splitting the difference, is resorted to. There may not be any real integration of interests of labor and management. Other criticisms have been made by other observers, as follows: the parties use economic coercion, bargaining is syndicalistic in tendency, and the union is anti-intellectual and bureaucratic. In other

3. Barnard, Chester, *The Functions of the Executive*, Cambridge, Mass.: Harvard Univ., 1951, pp. 161 ff.

words, there are times when labor and management see no alternative to coercion of one another, regardless of the public interest, and the union's emphasis on immediate gains and survival prevent it from helping to formulate the elegant solutions to conflict.

The case for collective bargaining is simple — it works. Agreements are reached, if only on a temporary basis. No satisfactory alternative has been devised to the practice of having the parties directly involved work out their own agreements on terms of employment. A strike threat, or strike call, plays the role of inducing agreement.

If the employer sets terms unilaterally, there is no real bargaining between parties. Arbitrariness exists. Such a situation is not stable. It engenders another alternative. Invariably, the workers will resort to political action, either legally or illegally. But this step simply transfers the conflict to the political arena from the economic. And it raises the question of what sanctions are to be imposed by government if either party refuses to comply with government directives. Economic liberalism looks with equal disfavor on the sanctions of seizure of private property and involuntary servitude.

Beyond Collective Bargaining

What reforms are needed in collective bargaining according to Follett's views — what lies beyond collective bargaining? The combative stance must be avoided. Instead, joint study should be made of facts in the problem situation. The situation in wage negotiations might be taken as a case in point. Everyone recognizes that criteria used in bargaining on wages are in the nature of rationalizations. Arguments by labor and management with respect to a living wage, maintenance of take-home pay, cost of living, labor productivity, wage inequities, wages in the same community, wages in the same industry, and ability to pay are arguments designed to justify conclusions drawn in advance of the formulation of the argument. It is as simple as this: labor wants more and more; management resists granting more and more. Both appeal to the public for support. Thus, both find it necessary to present socially acceptable arguments.

Another approach, one in line with Follett's views, has been tried in recent years. It is illustrated by the improvement factor and escalator clause in the General Motors

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"Mary Follett indicates a way of resolving the issues in business. Informality in examining the situation is needed. Regardless of his station, the one with superior insight ascertains what the others should do. It should be noted that this method is actually superior to political democracy because the quality of the perception, rather than the number who hold the view, is governing."

contract. Let us look at the escalator clause. It originally provided for a rise of one cent per hour for each 0.6 per cent increase in the B.L.S. Consumer Price Index. Here we find reference to measurable facts of the situation. The parties have agreed to raise wage rates in keeping with changes in the cost of living. Conflict has been resolved by this approach. The parties have agreed to a procedure to be followed to work out this phase of the wage agreement. The procedure calls for abstaining from rationalizations.

More Than an Intellectual Exercise

The techniques advocated by Miss Follett are intellectual in nature. They are supposed to call forth ideas, and the techniques are practical in that they are supposed to evoke useful ideas to meet common problems facing the businessman. These problems include welding together parts of the firm into a unified whole, adapting the whole to market changes, dealing with superiors and subordinates as well as peers, and dealing with unions. She showed that in meeting these problems with adequate solutions it is necessary to bring forth the best thinking of each member of the interested group on a relatively informal basis.

The ideas evoked point up the significance of problems and help frame alternative solutions. The incisive perception should be highly valued. There is more to the process than just that, however. There are procedural matters which are part and parcel of eliciting and applying the ideas. The procedural aspects refer to certain modes of behavior. Appropriate behavior includes the following:

- Face-to-face and informal meetings
- Free expression of views
- Recognition of differences in points of view
- Recognition of differences in interests
- Reconciliation of interests
- Gaining consent, or agreement
- Carrying out the steps of the solution in concrete actions.

It can be seen that procedures are present at each of the three vital stages: formulating the idea, winning consent to the idea, and implementing the idea.

It is in the procedural steps that Miss Follett anticipated much of the finding of human relations research. It is well

known by now that research in human relations has shown the importance of informal communication to mental health on the job, to the sense of participation, and to improved morale and productivity. But, perhaps, this school of thought has overlooked the fact that productive thinking is needed as well, especially in the managerial ranks. Miss Follett, it would appear, saw the need for productive thinking more clearly than many later observers.

Some Criticisms

It would not be proper to conclude this article without considering possible objections to the concept of integration and the illustrations cited in this article. One possible objection is that the procedures recommended by Miss Follett will lead to routines which will stifle creative thought—that the very steps recommended will lead to results directly opposite to the desired results.

The answer seems to be that not only the procedures, but also the spirit of Follett's philosophy must be applied. Otherwise, the procedures will simply introduce greater inflexibility of action and thought. Over-sensitivity to the points of view of others and the achievement of some harmonies may blind one to the need—in meeting recognized conflicts—for hard thinking by the individual, regardless of the views of others.

A second, and more specific, objection can be raised with regard to the escalator clause. It goes like this: the escalator clause is based on economic and statistical absurdities. It is an economic absurdity because it reinforces existing price trends whether they are inflationary or deflationary, and thereby contributes to instability. It is a statistical absurdity because it is dubious whether methods used in computing the cost of living are accurate to the nearest one- or two-tenths of one per cent.

The usual reply to these objections is that even though there are disadvantages to the escalator clause, the reference to it in wage negotiations sets a desirable precedent which could be a forerunner of a widely-adapted pattern in collective bargaining. This reply seems inadequate when we are experiencing a rise in Boulwareism and the scrapping of the escalator clause by General Electric, Westinghouse, and others.

The First Law of Management Audits

Optimum Management Surveys Take into Account Service or Profit Orientation of 'The Boss'

by Robert McQuie

WHAT makes one management survey succeed and the next one flop? The usual answers are that one analyst or consultant got all the facts and the next one didn't, or that the first man was a good salesman while the second one was not. Neither answer fits in with the common experience in making surveys, however, because many careful surveys are ignored while superficial ones are welcomed by management and put into effect.

This article attempts to formulate a general law to explain why surveys succeed or fail. Such a law, if found to hold up in practice, could be the basis of a body of professional guidance in an area where intuition now rules supreme. Much of this body would be derived from the observation that there are two basic types of managers and two basic types of management audits, but that only one type of survey fills the needs of each type of executive.

Two Types of Managing . . .

The first type of manager is *service-oriented*. The second type is *profit-oriented*. The service-oriented executive is preoccupied with pleasing the customer or "being responsive"; the profit-oriented executive with cutting costs and making a profit. Both are widely found in both business and government.

To the service-oriented manager, pleasing the customer or being responsive overrides all other considerations—and

quite rightly so. No incentive will move him to risk his effectiveness in this area. His effectiveness is judged by absence of complaints rather than cost of operations. Some of his subordinate organizations may be of only marginal utility, but he keeps them going rather than risk being unresponsive. Surplus personnel may be permitted to dawdle along so that they may be available for unforeseen emergencies or peak loads. Economical use of supplies and equipment is usually ignored in the face of more pressing considerations. Within the limitations of his budget, he is supposed to insure that unforeseen bottlenecks do not generate complaints, and cost is strictly secondary. He keeps extra fork lifts in the warehouse for use once a month on that especially large shipment that would otherwise hold up operations. He operates a drafting room with idle draftsmen for the peak load that could cause delay and complaint if it arose. He keeps extra sales clerks idle all day to cover the rush crowd of patrons that come at 5 p.m. when the offices let out. The system under which he works rewards him for doing this and penalizes him for risking service to produce a budget surplus. The fact that the warehouse delay is but a short one, or that the peak load seldom arises in the drafting room, or that the extra sales at 5 p.m. may not be worth the extra personnel costs makes no difference. He is motivated to avoid complaints.

The profit-oriented manager is not disinterested in service, but he is more interested in money. Without service, he makes no profit, but sacrificing everything to responsiveness makes no profit either. He is motivated to risk marginal effectiveness to make a profit. His promotability is judged not by the absence of complaints, but by the presence of budget surpluses. He may miss a deadline from time to time, but this will be overlooked if he produces a budget surplus at the end of the year. For the service-oriented manager, on the other hand, such a failure would be a black mark on his record.

. . . In Both Government and Industry

The service-oriented manager has been traditionally associated with government, and the profit-oriented with private



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enterprise. As corporations have grown, however, industry has acquired a corps of service-oriented executives, men who are expected to let nothing stand in the way of getting the job done and who are motivated to prevent complaints at all cost because there is no other way of measuring their effectiveness. In fact, industry's rather sudden shift of emphasis in the middle ranks towards service orientation may be one of the significant developments of our time. On the other hand, if appropriations become tight enough, the government manager tends to react like his profit-motivated brother in industry, not to make a profit but to find money for projects that cannot otherwise be carried out.

To conclude that one type is efficient and the other inefficient is unrealistic. Each operates under different ground

Surveys are generally recognized as being of two types. One type analyzes everything in an organization that can be improved: methods of work, procedures, accounting, facilities, and staffing. Its final aim is to come up with enough small changes to produce a cumulative saving or increase in efficiency for the over-all organization.

The second type of survey focusses on a problem instead of an organization. It may follow the problem through several different organizations and analyze key elements of the work of several executives, rather than everything that one man is responsible for. It points out one thing that is wrong with all of them, rather than all that is wrong with one of them. Thus, the problem-oriented survey does not provoke resistance to change by pointing the finger of guilt at any one executive.

Reactions Differ

Service-oriented managers have been found to react unenthusiastically to organization surveys. Because cost reduction is an ideal of the business world, they are interested in the results; because cost reduction seldom shows how to furnish better service, they seldom take action on the recommendations.

Profit-oriented managers tend to react in the opposite way. Recommendations of a management analyst for spending a little more here and making a change there in order to be more "responsive" leaves them agreeing in theory but disappointed. They tend to feel that details like that are problems for lower levels, no matter how low they presently are. Their attempts to put such recommendations into effect often fail because they do not deal with the details.

A General Rule

The relation between type of survey and type of manager, reduced to a general law, explains why surveys fail or succeed. Such a law helps the analyst to predict what type of approach is most likely to succeed under what circumstances. From the above observations, such a law might be expressed as follows:

1. *Surveys for service-oriented managers should focus on problems and procedures; surveys for profit-oriented managers should focus on over-all organizations.*

2. *A corollary to this law can be stated as follows: When a procedure has been surveyed, do not carry review of it beyond the problem-solver level of management. If the survey is of a complete organization, try to push final review of it up to the money-saver level.*

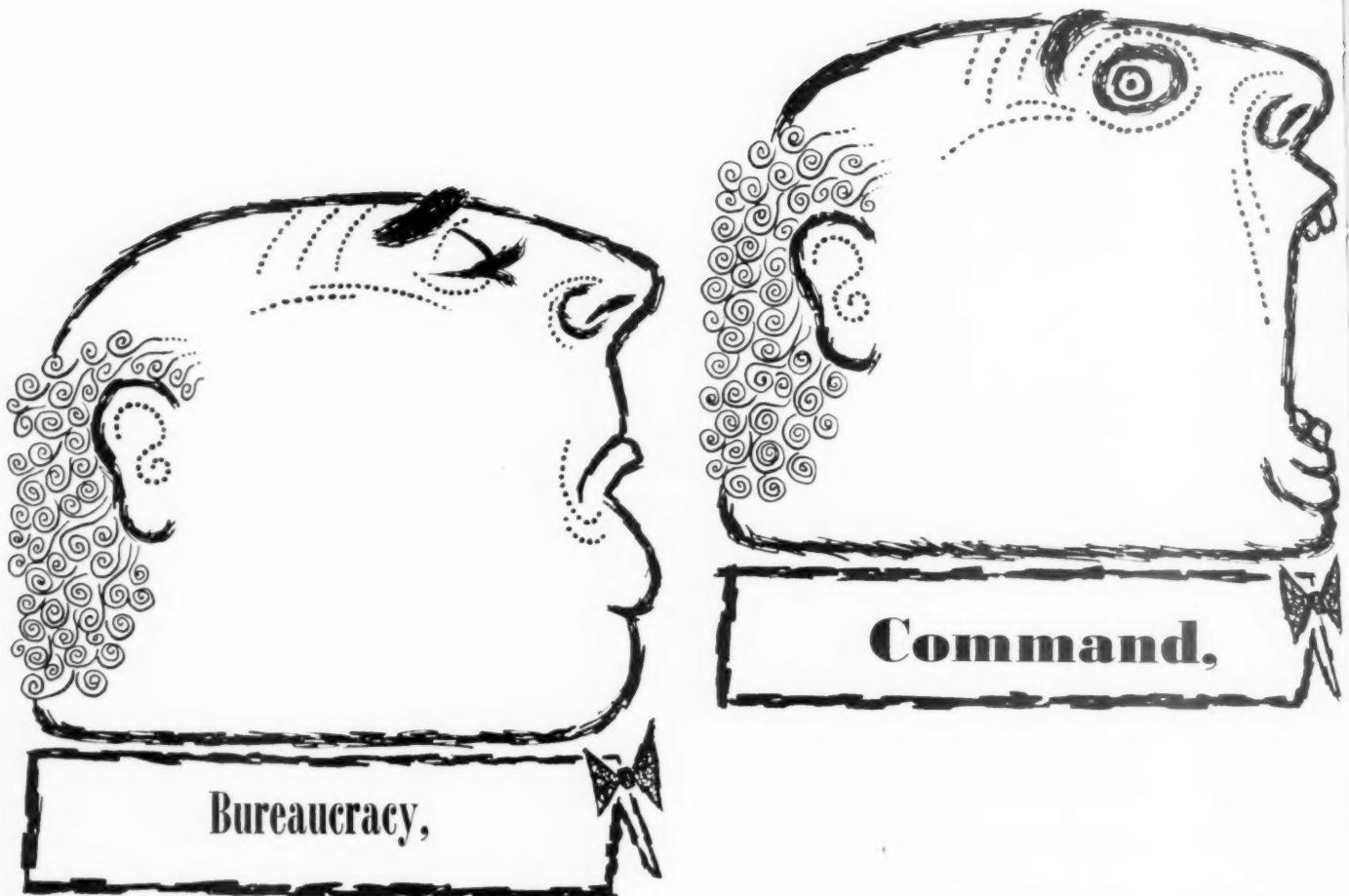
These are certainly not the only factors influencing survey success. Reflection on the problems of staff officials and consultants should lead to the formulation of other laws, equally if not more useful. What the First Law of Management Audits does, however, is to provide the first step towards understanding an area guided almost exclusively by hunch and luck. Until this field can work out a body of similar laws of operation, it stands little chance of operating on a really professional level.



rules. For example, it would be sheer folly for the commander of a radar line to risk even marginal responsiveness to show a budget surplus. Unfortunately, his friends who direct procurement agencies or post offices tend to react in the same way.

Fit Approach to Viewpoint

For the consultant or procedures analyst, this difference in outlook is all-important. The tools that represent good management to one represent irrelevant frills to the other. Cost reduction programs, improved accounting, and work measurement, to name only a few, will solve one manager's problems and do nothing at all for the other. Each type of executive, then, requires a different type of management survey.



EACH ORGANIZATION has a "climate" which reflects its fundamental character as an institution. Members guide their conduct by a "logic" which is consistent with each participant's view of this climate. This paper will investigate three "ideal-type" logics: the "logic of bureaucracy," the "logic of command," and the "logic of the mission".

Max Weber, the founder of modern bureaucratic theory, employed the concept of the "ideal-type" much as the mathematician uses the concept of infinity, or the engineer might postulate a frictionless engine. The ideal-type, though it seldom if ever exists in pure form in nature, provides a useful model for analytical purposes.

Logics of Bureaucracy, Command

Bureaucracy is characterized by the primacy of routine and regulations. In effect, it represents the "reign of rules". In the ideal-type bureaucracy, rules provide guidance for all possible occasions. It is the duty of the executive or supervisor to apply rules to cases and make decisions accordingly. The subordinate in the ideal-type bureaucratic

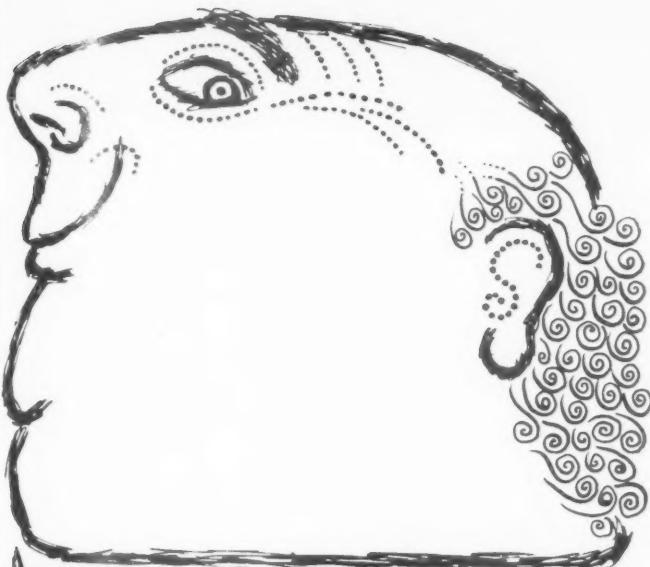
organization is responsible only for "compliance". The accomplishment of the mission of the organization is not his responsibility and need not even be a conscious consideration. "Legality," not effectiveness, is the fundamental virtue.

The ideal-type command climate is characterized by the dominance of the hierarchy. The subordinate needs only to implement the will of his superior. He is not responsible for the accomplishment of the mission of the organization — his obligation extends merely to carrying out his assigned task in the prescribed manner. When performance fails, the responsibility lies not with the subordinate but solely with the superior. It is not the place of the subordinate to question the relevance of immediate objectives to the mission, nor the appropriateness of the prescribed methods to the accomplishment of the immediate objectives. "Their's not to reason why; their's but to do or die."

Logic of the Mission

The mission-dominated management climate is characterized by general concern for the accomplishment of the organization's mission. The "citizen" of the organization uses the values and goals of the enterprise as guides for his own conduct. He looks primarily to the necessities of his work for guidance. He sets his course toward the

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Management

by Lt. Comdr. Robert J. Massey, U.S.N.,
and Waino W. Suojanen

organization's goals, then keeps himself on course through "feed-back" from his segment of the organization. As Mary Parker Follett put it, he seeks to discover the law of the situation and subordinate himself to it. "Scientific management," from this point of view is

... the attempt to find the law of the situation. With scientific management the managers are as much under orders as the workers, for both obey the law of the situation. Our job is ... to devise methods by which we can best *discover* the order integral to a particular situation.¹

Peter Drucker characterizes this type of organizational behavior as "management by objectives and self-control." Management by objectives and self-control,

... makes the common weal the aim of every manager. It substitutes for control from outside the stricter, more exacting and more effective control from the inside. It motivates the manager to action not because somebody tells him to do something ... but because the objective needs of his task demand it.²

These three "logics" do not exhaust the sources to which men look for guidance. The "tradition direction," "other direction," and "inner direction" of David Reisman, though related, are not identical to the logics of bureaucracy, command, and the mission. And of course, the mission is not the only goal of those who employ "management by objectives and self-control." Personal advancement is also a frequently sought goal.

1. Mary Parker Follett, *Dynamic Administration: The Collected Writings of Mary Parker Follett*, ed. by Henry C. Metcalf and L. Urwick, New York: Harper, 1940, p. 59.
2. Peter F. Drucker, *The Practice of Management*, New York: Harper, 1954, p. 136.

Logics Compared and Contrasted

Harold Smiddy contrasts the concept of command and that of management in the following passage:

[There are] two implacably contrasting visions of what a manager should be, between which we have a primary duty to choose. One is that a Manager is a man with other men, his subordinates, to multiply him; to increase his capacity to effectuate his ideas, his aims, his work, to be—for him—additional arms, legs, even brains. And that, in its naked selfishness, is a concept of an "elite" and its slaves, of a dictator and his subjects, of classes of human beings with superior and inferior human dignity and identity.

The other alternative is that a manager is one whose own work is to lead—but to lead by inspiring or persuading, by serving, by teaching, by setting a climate of freedom and initiative in which he and his other manager and non-manager fellow-workers can recognize common interests, and pursue common purposes rooted in those common interests; in the formulation of which purposes, or objectives for the enterprise or component being managed, their thinking has had a part.³

Command, as a management technique, is certainly not confined to the military alone. In fact, it may not be any more predominant in the military organization than in any other area of structured activity. Janowitz, in one of the most comprehensive analysis of military sociology ever conducted, concludes that:

As a social organization, the contemporary military establishment has for some time tended to display more and more of the characteristics typical of any large-scale non-military bureaucracy . . .

The typical sociological analysis of military organization does not take into account the consequences of these trends and instead continues to emphasize authoritarian, stratified-hierarchical, and traditional dimensions as a basis for distinguishing the military from the non-military bureaucracy.⁴

Command Operant on Battlefield

Probably the most legitimate sphere for the exercise of command is the battlefield. Yet, even there, operations must be liberally guided by "the logic of the mission" if success against the enemy is to be achieved. This was true even in times when the relative simplicity of warfare and the stratified nature of society made command more commonplace than it is today.

In the struggle with Napoleon, the Duke of Wellington very succinctly stated what he conceived to be the proper relation between the logic of the mission and that of bureaucracy. The following is a letter to the British Secretary of War, Lord Bradford, written about 1810:

My Lord:

If I attempted to answer the mass of futile correspondence that surrounds me, I should be debarred from all serious business of campaigning.

I must remind your lordship—for the last time—that so long as I retain an independent position, I shall see that no officer under my command is debarred by attending to the futile drivelling of mere quill driving in your Lordship's Office—

3. Harold F. Smiddy, "Managerial Decision-Making," *ADVANCED MANAGEMENT*, November, 1958, p. 6.
4. Morris Janowitz, *Sociology and the Military Establishment*, New York: Russel Sage Foundation, 1959, pp. 15-17.



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from attending to his first duty—which is, and always has been, so to train the private men under his command that they may, without question, beat any force opposed to them in the field.

I am,

My Lord,

Your obedient servant

/s/ Wellington⁵

Logic of Mission Superseding Command

In an even more authoritarian era and society, Russia under Frederick the Great, we have an example of a military man following the "logic of the mission" in conscious preference to the "logic of command". In this instance, Von Seydlitz, a cavalry leader, upon receipt of orders to attack the still unbroken Russian infantry in the battle of Zorndorf in 1758, sent back the answer: "Tell his majesty that my head will be at his disposal after the battle, but that as long as the battle lasts, I intend to use it in his service."⁶

The logic of command is by no means exclusively a military phenomenon. It occurs in all types of organizations. Probably its greatest remaining stronghold is the small business managed by its owner. Instances of organizations dominated by the logic of command—or of attempts to impose it—can even be found in educational institutions.

Each logic is grounded in certain fundamental assumptions about the character of the organization. Given the validity of these assumptions, each will prescribe rational and consistent behavior. However, given any particular set of circumstances, each logic will probably prescribe different behavior. Thus conduct which is rational when judged from the viewpoint of the logic which dictated it, may be highly irrational when judged by another standard.

'Efficiency', Creativity Views

Each of the three ideal-types implies its own definition of "efficiency," a word with many—and frequently contradictory—definitions. The "efficiency" of the logic of command is the degree to which the commander's will has been implemented. A business could have complete efficiency in this sense and still go bankrupt. Efficiency, under the logic of bureaucracy, is the extent to which regulations are followed. The efficiency relevant to the logic of the mission,

5. Quoted by Major General O. L. Nelson in *National Security and the General Staff*, Washington: Infantry Journal Press, 1946, p. 465.
6. Quoted in Walter Goerlitz, *History of the German General Staff, 1657-1945*, translated by Brian Battershaw, New York: Praeger, 1953, p. 4.

on the other hand, closely resembles that of thermal efficiency, it is the ratio of mission accomplishment over costs, of desired output over input, of valued achievement to potential achievement. Only when possibility and practice, actual and potential, approach each other do we have high efficiency of the type implied by the logic of the mission.



Dr. Suojanen's name is not new to the readers of *Advanced Management*. He has made consistent contributions to our magazine over the years. Presently assoc. professor, U.S. Naval Postgraduate School, Monterey, Calif., he has served not only as teacher of organization and management, but as consultant and accountant to major corporations in this country. His many articles have been included in leading professional journals all over the world. Degrees: B.S., 1942, University of Vermont; M.B.A., 1946, Harvard Graduate School of Business Administration; Ph.D., 1955, University of California.

Each logic has its characteristic view of creativity. The same act may be regarded as evidence of "initiative" from the logic of the mission; "heresy" from the logic of bureaucracy; and "insubordination" from the logic of command. (Again it should be emphasized that the ideal-types or models, with the exception of psychotic behavior, seldom if ever occur in their pure form in actual practice.)

The conflicting claims of the three logics give rise to an interesting phenomenon of military life. Virtually all of the official sanctions available to the military superior support enforcement of the logics of command and bureaucracy; yet the requirements of the task at hand usually demand submission to the logic of the mission, especially in non-tactical situations. As a result, those officers who figuratively turn their backs on the superiors—who are often casual about complying with the flood of instructions—but who get the job done, frequently have the most successful careers.

Legitimate Sphere in Each Logic

The logic of the mission is not the only legitimate guide for participant conduct. The requirements of the mission may dictate that under certain circumstances, the member must rely on guidance by the other logics.

The logic of command is important where a high percentage of decisions are the kind that Simon classifies as "decisions of encounter". Decisions of encounter are those which must be made because some change in the environment demands prompt response. Time is of the essence in this particular decision. In fact, the promptness with which the decision is made and carried out is often more important than the choice from among the available alternatives. The flame-out of a jet aircraft illustrates this point. The pilot can eject or, assuming a suitable airfield is within gliding distance, he may attempt a flame-out approach and landing. If he delays the decision too long, the situation

will deteriorate until neither of the original alternatives are available and the consequences of failure to make a timely decision will be swift, dire, and permanent. Decisions of encounter require command on the part of superiors and faithful and timely execution by subordinates. Tactical, or crisis-oriented, operations abound in situations demanding decisions of encounter; hence, the traditional military emphasis on command.

"Set-piece" decisions, on the other hand, are those decisions where time is of less importance than selection of the best of the available alternatives. Decisions on plans, budgets, and design of equipment are generally of this type.⁷ Where the majority of the required decisions are of the set-piece type, submission to the logic of the mission will generally lead to the better results. Most decisions in business are of the routine-oriented, or set-piece, variety.

Legitimacy; Mix of 'Logics'

The logic of bureaucracy also has its legitimate sphere. Rules which protect the rights of individuals; rules which provide the essence of experience of the "one best way"; rules established for co-ordination or necessary standardization must be obeyed in an enlightened way. If the needs of the mission are to be served, the rules must be applied in those situations where they are appropriate.

The ideal participant will guide his conduct by a varying admixture of the three logics. Dedication to the goals of the organization will dictate when primary guidance should be by command or by regulation. However, mere "dedication" alone is not of itself sufficient to insure optimum utilization of the guidance provided by superiors and regulations. The committed member will subordinate himself to superiors or regulations only when he has faith, that by so doing, the achievement of the goals of the organization will be advanced.

Faith in superiors is based on belief in their dedication to the objectives of the organization and conviction in their competence. If superiors are more interested in empire building, or in advancing their own interests, then they are not likely to win the willing obedience of the true organization citizen.

Loyalty to Standard Operating Procedure and to regulations is based on a reasoned belief that they represent the distilled wisdom of past experience. Such faith is strengthened by evidence of systematic improvement, or conversely, weakened by restrictions on criticism. A respected procedure is like a fighting champion who meets all logical contenders. Enlightened faith in the "system" requires a public process of survival of the fittest through which old rules are discarded as better ones are devised.

Over-conformity, Responsibility Avoidance Linked

The participant who has faith in the regulations will subordinate himself to them when appropriate. When he lacks faith in them, and believes himself powerless to do anything to change them, he will subvert them. He will try

to make his contribution in spite of them. This represents the breakdown of bureaucratic logic.

Ideally the participant's choice of guidance should be based on the necessities of the mission. However, in practice, psychological considerations too often determine the



mode of conduct. Merton has advanced the theory that over-conformity is a form of "deviant behavior" in which an insecure personality seeks security through avoidance of responsibility.⁸ Psychic security and insulation from responsibility are common in those organizations where the prevailing climate is dominated by the logic of bureaucracy. In such institutions, the individual tends to maintain his psychic integrity within a ready-made shell of non-responsibility.

Logic of the Mission Offers Breakthrough

The member who is willing to renounce the shell of non-responsibility and welcome the logic of the mission has embarked upon mature citizenship in his organization. He has accepted responsibility for the results of his efforts and for his influence on the success of the organization. Such citizenship is seldom the path of least resistance, but it is probably the surest foundation for organizational effectiveness and individual growth.

(Editor's Note: A sequel to this article, entitled *Molding Organization Climate*, will appear soon.)

7. Herbert A. Simon, "Background of Decision Making," *Naval War College Review*, November, 1957, pp. 4-5.

8. Robert K. Merton, *Social Theory and Social Structure*, Glencoe, Ill.: The Free Press, 1957, p. 185.

Economic Factors

In Business Planning

Statistical Data No End in Itself; Balanced Planning Requires Impartial Application of Inter-Disciplinary Skills, Check on Adequacy Of Separate Department, Division Plans; Current Opinion Trends Need Weighing

by Murray L. Weidenbaum

ECONOMISTS can make a number of contributions to business planning, particularly in relating the external economic environment to company operations. This article briefly describes the business planning process and discusses some of the more important economic factors that affect the planning operation.

Fundamentally, business planning is not, or at least should not be, merely a collection of estimates of future sales, profits, manpower, or other statistical forecasts. To cite the obvious, *Webster's New International Dictionary* informs us that to plan is "to devise or project as a method or course of action". Here we have the essence of business



Presently a corporate economist with the Boeing Airplane Co. in Seattle, Mr. Weidenbaum has also served as economist with the U.S. Bureau of the Budget in Washington, D.C., 1949-1957. He received his Ph.D. in economics from Princeton University. He has served as consultant to the U.S. Departments of Labor and State; U.S. Chamber of Commerce, and the Washington State Department of Commerce and Economic Development.

planning: it is a process which is designed to provide a course of action for a business enterprise. The statistical data merely furnish a basis for decisions.

The present article is primarily concerned with the overall planning of a diversified business enterprise rather than the planning performed by an individual division or department. Much of the approach and methodology, however, is equally pertinent to both.

Economics and business planning certainly are not synonymous, although many people may take them to be so or would like them to be so. Business planning properly is a multi-disciplinary field in which economics, accounting, engineering, marketing, and many other specialties may bring to bear their particular expertise. The planning organization must contain or draw upon all of these as well as other capabilities.

The following major phases of the business planning process are discussed below:

1. Setting forth the external environment in which the business enterprise will be operating during the planning period.
2. Establishing goals and objectives for the enterprise.
3. Analyzing the capability and resource availability of the enterprise.
4. Developing the specific programs to be undertaken.
5. Evaluating the projected performance of the enterprise.

Forecasting the External Environment

Most business plans, particularly those of a "long-range" nature, begin with or are prepared on the basis of an evaluation of the external environment in which the company will be operating. This is the area in which business economists may make their most important contribution. All available surveys of the rôle of the company economist indicate that forecasting is the predominant activity which they have in common.

Economic forecasts are reported to be of value to management in preparing sales objectives and planning inventories, procurement, production, and capital expenditures for periods from 5 to 20 years in the future.

Company planning may utilize different types of economic forecasting. These vary from sophisticated models of the gross national product to a "naïve" assumption à la Sewell Avery that the storm cellar is the most likely symbol of the economic outlook.

Gross National Product

Almost all of the long-term economic forecasts used by business firms in recent years are based, with varying degrees of sophistication, on the following formula:

$$G = E \times H \times P$$

G = the gross national product.

E = the average number of persons employed during the period.

H = the average hours worked per employee.

P = the output per man-hour or productivity.



Employment—The employment estimates are generally based on Census Bureau and Labor Department projections of population and labor force. Given the population forecast—and the Census Bureau obligingly provides several alternatives, based primarily on different assumed fertility rates—the estimate of the labor force primarily is a question of determining "participation" rates among the groups of working age. For forecasts up to about 15 years in the future, the relevant population distributions involve little guesswork, because those of working age have already been born.

Assumptions are then necessary as to the portions of the labor force not involved in civilian employment—the members of the armed forces and the unemployed. A four per cent unemployment ratio seems to be the most popular assumption.

Hours—The estimate of hours is generally based on the historical experience of a declining secular trend in the average work week—usually a reduction of less than one per cent a year.

Productivity—This factor is estimated to increase as the result of expanded research and development, new business investment, and increasing application of new technologies such as those spawned by the entire field of electronics.

Analysis and Judgment—In many cases, much detailed analysis of economic history and a very considerable amount of judgment and insight go into the preparation of these forecasts. Also, the spelling out of the basic assumptions underlying the forecast serves as a description of much of the external environment in which the enterprise will be operating. Typical assumptions include the following:

1. The current state of international tensions—the cold war—will continue. No major war will occur during the forecast period, nor will a workable

disarmament program be adopted.

2. Scientific and technological advances will continue at the current rate or higher.
3. The Federal Government will take necessary action to avoid major depressions or runaway inflations.
4. Prices will rise at the average rate experienced during the 1950s (or alternatively, all estimates are prepared in "constant" dollars).

Projections of the over-all performance of the economy are

point out the historical and projected rates of growth in the economy as a whole, in the industry or industries in which the company is operating, and for other companies of comparable size or market position. Similar data can be obtained for profit rates.

Sales objectives can be set in the form of maintaining or improving market shares. Here, knowledge of the historical trend of the pertinent industries and markets, as well as usable economic forecasts can play an important role. In



in the nature of a starting point and need to be related to specific industries and geographical areas.

Setting Goals and Objectives

Economists have generally been nurtured on the doctrine of profit maximization as the rational mode of conduct for entrepreneurs. Profit maximization may be the dominant goal of a business enterprise, but that is not necessarily the situation. A business organization may have a variety of goals.

Diversified Goals—Management may wish to maintain—or increase—the historical growth in sales or earnings. It may wish to attain a given percentage rate of return on investment. A certain diversification of the product line or market served may be desired. Some or all of these objectives may be aimed at. In fact, they may be interrelated and many of them may be derivatives of an explicit or implicit profit maximization goal. The economist may aid in selecting the type of goal to be followed as well as in providing statistical measuring sticks for gauging attainment.

Sales Goals—In the case of sales goals, the economist can

some cases, the identification and measurement of the market or industry may be no simple task. The electronics "industry", to cite an important example, still has not come into its own in the Standard Industrial Classification which underlies the data of the Census Bureau and many other governmental agencies. Bits and pieces of electronics production are contained in a dozen or more SIC codes. The case of missile production would be even more difficult, were it not for the fact that the customer is in a position to make comprehensive reports available.

Analyzing Resources and Capabilities

The economist can make a contribution to the analysis of an enterprise's resources and capabilities during the planning period by stressing the element of futurity.

For example, financial and engineering personnel may be in the best position to estimate the basic costs of future programs. Yet, they may need to be reminded that price levels may change, and possibly at different rates than those that obtained in the recent past. Some simple analyses of over-all supply and demand factors for the commodities

involved may prove to be quite helpful. This illustrates a general function of the industrial economist: to relate the activities of his individual company to broader trends in the national and, increasingly, the international economy.

Personnel management may perform the basic projections of manpower requirements. Yet, they may need to be advised concerning future trends in national or regional labor force availability. In this connection, the U.S. Department of Labor's studies of the future composition of national employment can be helpful to management in relating the problems that a company may consider peculiar to its operations to fundamental developments in the national economy. The anticipated shift from relatively unskilled workers to professional and technical personnel is striking for individual firms as well as for the economy as a whole.

In the short run, the analyses of the external business environment may be required by treasury officials concerned with estimating the cost and availability of corporate funds and the preferences among stock issues, bonded indebtedness, and bank debt.

In some cases, the proposed capital asset portion of the business plan may usefully be related to the outlook for business investment generally and to sales-investment ratios for specific industries. The types of economic data and guidance required in developing the resource aspects of business planning vary with the individual firm.

Developing Programs to be Undertaken

The development of specific programs to use the enterprise's resources in meeting established goals is generally a function of line or divisional management. Here, too, the role of the economist is essentially that of advisor or reviewer.

The most apparent use of economic analysis is in connection with sales forecasting. Forecasts of the sales of specific products need to be checked against appraisals of the market potential. Hopefully, the sales estimates were prepared on the basis of a comprehensive market research job in the first place, which included use of the analyses and forecasts of the national economy and of the specific industries in which the firm is operating.

In a more fundamental way, continuing analysis of the various segments of the national economy may yield selected "growth" markets which the enterprise might wish to penetrate with new products or adaptations of existing products. Conversely, information on differential growth rates—and profit rates—can be useful in selecting among the various possibilities of products to be developed and marketed.

Evaluating Performance

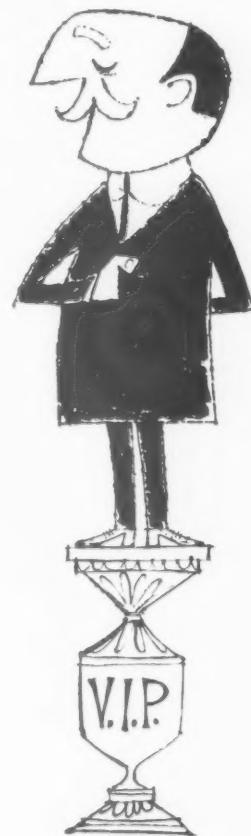
A critical aspect of business planning is the evaluation of the adequacy of plans of the individual division and department as well as of the plan of the company as a whole. The evaluation itself is a proper function of management. The economist—and other staff specialists—mainly provide the materials for making the evaluation, such as the quantifications of the performance of the larger group of which the enterprise is a part, such as the industry or the economy as a whole. The goals and objectives described earlier can play

a crucial role in evaluating performance.

Here we close the loop. The reasonableness of the goals and targets set earlier are checked against the likely accomplishments of the enterprise in view of its resources and capabilities in the expected environment. Necessary modifications may then be made in the goals and targets as well as in the programs to accomplish them.

The Role of the Economist

In planning, as in the other phases of business operations, the economist must be guided by the special problems being faced by the company, by its particular history and outlook, and by the stated needs of its management for staff work. The role of the economist—or of any staff specialist—is not to identify the most intellectually stimulating problems to



work on, or necessarily to use the most advanced and sophisticated techniques. His function is to make, on the basis of his special training and capability, the most useful contribution to his management. This contribution certainly is not to talk down to management (this may be more difficult in practice than it appears) or to put some intellectual window dressing on the most fashionable current opinion.

This contribution consists of bringing to bear on business problems the tools of economic analysis, the results of economic research, the findings from economic statistics, and, in a generalized way, the value of professional objectivity. The role of the business economist might be considered to be furnishing a window through which the firm can see aspects of the outer world it may otherwise ignore or not fully comprehend.



Speed Reading

For Industrial Personnel

by Peter J. Hampton

UNTIL RECENTLY, there was little hope that industry's need for quick and considerable improvement in reading speed and comprehension for its personnel could be adequately satisfied. Then in 1957, the Perceptual Development Laboratories of St. Louis, Mo., introduced a new approach to reading improvement, an approach that makes possible an increase in reading achievement of up to 200 per cent and more in 12 short weeks.

The basic criterion underlying this new approach to reading improvement is flexibility — flexibility of method and purpose. Most adults are used to reading everything according to one method — the line-by-line — where every word is read, and according to one objective: that of trying to understand and remember as much as possible. This compulsive attitude toward method and objective in reading, the St. Louis people found, is one of the major reasons why rapid progress in reading is so difficult to achieve.

The over-all objective of the speed reading program for industrial personnel at the University of Akron is to help

participants develop those skills by means of which meaning from printed material can be obtained. The more specific objectives which provide the means for achieving the over-all objective are as follows:

1. Efficiency in line-by-line reading.
2. Proficiency in determining the purpose for which each selection is read.
3. Flexibility in adjusting techniques and rate of reading to fit the purpose and the difficulty of the material read.
4. Improved interest in reading, positive attitude toward reading and increased amount and variety of materials read.

The line-by-line method of reading can be used to good advantage when the reader is confronted with almost totally unfamiliar material, or when he reads for emotional and esthetic enjoyment. Thus a passage from a scientific treatise or a poem by Keats or Shelley should be read slowly, so as to get the most meaning and beauty out of the context. Efficiency in line-by-line reading can be secured in several ways. It can be obtained by increasing rate of reading.

Steps to Aid Increase

We follow three basic steps in helping industrial personnel increase rate of reading: 1) we teach participants to read in units composed of groups of words 2) we help them reduce the number of unnecessary regressions, that is, looking back on material that has already been read and 3) we help them to read without vocalizing or subvocalizing each word.

Another way in which we try to increase the reading efficiency of our students is by having them achieve a satisfactory comprehension level for the material read. When students start out with us in reading improvement,



A resident of Cleveland, Mr. Hampton is director of psychological services and associate professor of psychology at the University of Akron. He is a clinical and industrial psychologist, an active public speaker, and the co-author of several books and more than 100 papers on psychology published in professional magazines. Degrees: B.A., 1938; M.A., 1940, University of Manitoba; Ph.D., 1950, University of Minnesota and Western Reserve University. He is a member of the American Psychological Assn., American Assn. of Group Psychotherapists and other similar professional organizations.

Surveying Reading Materials

The surveying technique permits the use of several different approaches in an effort to obtain a broad overview of the major points to be considered in an article. This overview provides the student with the necessary information for planning his purpose in dealing with the material. Surveying involves several steps:

1. Reading the title and considering its implications.
2. Reading line-by-line any descriptive captions found after the title or on the jacket cover.
3. Examining illustrations and table contents, if such exist.
4. Rapidly reading the first paragraph line-by-line.
5. Reading the heading and the first sentence of each succeeding paragraph.
6. Rapidly reading the last paragraph line-by-line.

In surveying a book, these six steps are followed for each one of the chapters. Surveying requires a good deal in the way of flexibility. Frequently surveying is all that is needed to achieve the necessary purpose in reading. If other techniques of reading are used by the student, then surveying the material first frequently contributes to both rate and comprehension of subsequent reading.

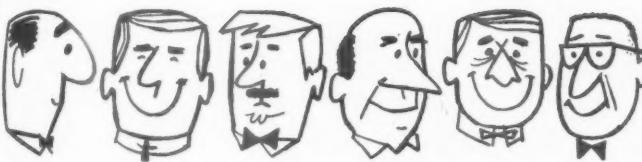
In many instances, the objective in reading should not be to read everything on the page. Often, only the more important information should be read. This can best be accomplished by using the technique of skimming. In skimming, the student takes note of the title and the subheadings, and then proceeds to 1) read the first paragraph in its entirety 2) read the first and last sentences of every succeeding paragraph 3) read the last paragraph in its entirety. The title and subheadings identify the topic. The first paragraph sets the stage for the reader. The first and last sentences of each succeeding paragraph tell what is going to be said and what has been said, and the last paragraph usually sums up.

Learning to Scan Effectively

Then there are times when a person's major objective in reading is to locate specific information. This can best be achieved by using the technique of scanning. The ability to scan depends on selective perception. In scanning, the reader has to develop and use a mental set of readiness to perceive only certain information from a background of many facts. He permits himself to become only dimly aware of the sea of words before him, until he spies a word or words related to his mental set. When he finds such words, the road to the desired information becomes short and simple.

Most of us do not make enough use of this powerful reading method. Only in searching through a dictionary, an index, or a telephone directory, are we consciously aware of using this method. A conscientious and systematic use of the technique of scanning can save the average personnel man in industry many hours of reading time each week.

The basic element in scanning is the development of the right kind of mental set. The reader must know exactly what he is looking for and in what form he expects to find



some of them read with too much comprehension and some with too little. By the time they finish the course students have learned to adjust their comprehension to the purpose that dictates their reading. If the purpose is to learn as much as possible of the material read, then students strive for a very high level of comprehension; if only a cursory acquaintance with the material read is desired, then they strive for a much lower level of comprehension. Thus the operational level of comprehension at which students read may vary anywhere from a 40 to a 90 or 100 per cent accuracy.

Comprehension, Determining Purpose of Material

Achievement of a satisfactory comprehension level for reading is obtained by 1) helping the student improve his concentration during reading 2) showing him how to handle reading materials with efficiency and organization, and 3) helping him achieve the kind of orientation toward vocabulary that will stimulate vocabulary improvement during and after the course.

The purpose for reading is generally determined by 1) having students survey the material to be read before they settle down to reading it and 2) having them decide what use will be made of the material after it has been read.

More specifically, we ask students to ask themselves these four questions:

1. What information do I want from the material?
2. At what level of comprehension should I read the material?
3. How much of the information do I have to retain and for how long?
4. How will I use the information I get from reading?

Flexibility in reading is achieved by learning to select a technique or a combination of techniques to fit the purpose and the difficulty of the material to be read.

this information. For example, if he searches for a name, he must look for a name. If he searches for a number, he must look for numbers. If he searches for a specific topic, he must look for key words that would normally be used in discussing the topic. The personnel man who has learned to scan properly, can "read" up to 20,000 words per minute in search of a word or a fact.

Learning to Adjust Rate

Finally, flexibility in reading may be obtained by having the student adjust his rate of reading so that material of

ability in adjusting techniques and rate of reading to fit the purpose and difficulty of the material to be read, are all essential objectives that must be met if a person is to become an efficient reader. Even more important than realizing these objectives is the need to read with interest and positive attitude. This means that a person will want to read not only when he has to, but when he can.

The industrial personnel man must look upon reading as a challenge to succeed, as an opportunity to share in the heritage of our culture and our technology. He must read more and more varied material. Reading, like walking and



varying difficulty is read at an optimum rate for the level of comprehension that is desired. In this connection, the student is advised to read material at different rates of speed in relation to the purpose he has in mind. If he reads a novel and the basic purpose is to get an over-all acquaintance with the characters and the plot of the story, then the reading rate can be very fast, possibly as high as 700 to 800 words per minute. If, on the other hand, he is reading a scientific treatise in a subject matter area which is unfamiliar to him, then his reading rate should be adjusted to a level where he reads no more than about 200 words per minute. In other words, we urge students to read at a rate of speed that will satisfy the comprehension level desired. To achieve this variation of rate in reading, the student must choose the right method of reading. At times this will be line-by-line reading; at times it will be skimming or scanning; at times it will be survey reading or critical reading.

Efficiency in line-by-line reading, proficiency in determining the purpose for which a selection is read, and flexi-

talking, must become skills which are exercised daily—and not only for the sake of communication, but for the sake of living itself.

Comprehension and Speed

More than half of the personnel people with whom we work in reading improvement actually lose comprehension when post-test results are compared with pre-test results. This is to be expected. Some of the losses extend to as much as 44 per cent in accuracy. The gain in terms of comprehension go as high as 43 per cent in accuracy. In most instances, persons who lose in comprehension as the course proceeds are persons who read at too high a level of comprehension when they first come into the course.

One of the major emphases that we make throughout the course is that not all material should be read with a high level of comprehension. Often it is to the person's advantage to sacrifice some comprehension in order to gain speed. The purpose for reading may be such that a high level of comprehension is not necessary.

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By the time our students have finished the 12-week course on speed reading, we expect a minimum increase of at least 50 per cent in rate of reading. Not all of our students manage this. But some of them make increases as high as 200 per cent. A few have gone above 286 per cent. The reason why this is possible is that students are invited to change not only their reading habits, but also their reading attitudes.

Retention of Gains

One of the questions frequently asked in connection with our kind of gunshot course in speed reading is, "How much



of the increase in reading speed, reading comprehension, and reading achievement stays with the student as time elapses?" We have made several checks on retention of gained speed and comprehension, and we find that whereas there is some loss, the loss is not as great as may be surmised. The loss comes fairly soon after the completion of the course. As time goes on, the loss progressively decreases.

We try to avoid serious loss by urging our students to continue in practice with their newly acquired attitudes and habits of reading. To this end, we recommend a variety of reading materials for them to work on after the course is completed.

An average loss in speed of reading extends to about 20 per cent; loss in comprehension extends to about 5 per cent. This loss, we feel, is not serious because the major rewards of a course like ours are found in the changes of attitudes that take place and these changes have duration value, even if the application of the newly acquired attitudes after the duress of course participation is gone, is no longer quite as satisfactory as one might wish it to be.

Evidence of Results

Table 1 presents a detailed account of reading improvement made by a typical group of industrial people with whom we worked. The rate of improvement for speed of reading, for comprehension of reading and for over-all achievement in reading varies considerably within the group.

Reading Improvement of Industrial Personnel at the Polson Rubber Company as a Result of a 12-Session Course on Speed Reading

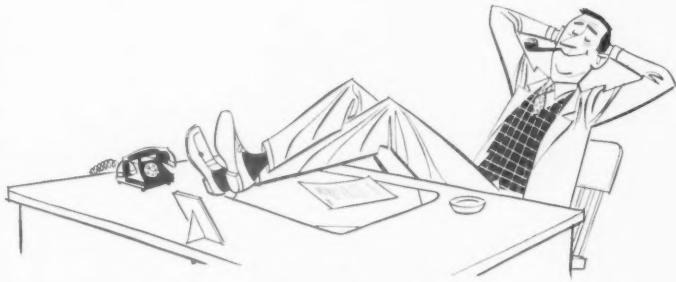
SUBJECTS	Pre-Test Results			Post-Test Results			ATTEND- ANCE	Percentage of Improvement		
	RS	RC	RA	RS	RC	RA		RS	RC	RA
1	182	80	145	611	45	275	10	236%	-44%	90%
2	286	80	228	487	85	414	5	70	6	82
3	353	70	247	516	75	387	7	46	7	57
4	235	70	164	625	80	500	12	62	14	205
5	235	90	211	530	80	424	12	126	-11	101
6	250	90	225	422	75	316	11	69	-17	40
7	387	80	309	650	80	520	11	68	0	68
8	480	80	384	1145	75	858	12	139	-6	123
9	211	70	147	814	95	773	12	286	36	426
10	286	70	200	461	100	461	12	61	43	131
11	255	90	229	853	80	682	12	195	-11	198
12	223	90	200	286	60	171	3	28	-33	-15
13	279	80	223	614	70	429	12	120	-13	92
14	267	90	240	408	85	346	12	60	-6	52
15	211	60	126	312	65	202	10	48	8	60
16	343	70	230	558	55	306	9	63	-21	33
17	500	80	400	856	50	428	8	71	-38	7
18	444	70	300	505	75	378	9	14	7	26
19	240	70	168	480	65	312	10	100	-21	86
Median	267	80	274	530	75	687		70%	-6%	82%
Range	182	60	126	286	45	171		28%	-44%	-15%
to 480	90	400	to 1145	100	858			to 286%	44%	426%

Key = RS = Reading Speed

RC = Reading Comprehension

RA = Reading Achievement = $\frac{\text{Rate} \times \text{Comprehension}}{100}$

But this was to be expected in view of the fact that we started with a similar variation when the course began. Then too, there is the factor of attendance, which varied from 5 to 12 sessions, or, in terms of percentages, from 40 to 100 per cent. Those persons who attended all 12 sessions obviously improved more than those whose absence significantly disrupted continuity and reinforcement.

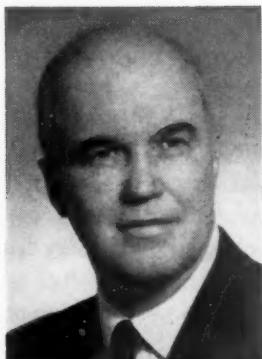


(Editor's Note: In connection with speed reading improvement, certain Society for Advancement of Management Chapters have in the works various speed reading courses, and one-day workshops. S.A.M. is interested in expanding its budding nationwide network of skilled instruction to enhance reading speed. If interested, write S.A.M. headquarters, N.Y.C. or the S.A.M. chapter in your vicinity for information.)

Appraising the Work of Supervisors

Supervisor Accountability for Job Output Must Be Sharply Defined for His Eventual Identification with Management Interests, Problems; Appraisal Of Results Against Pre-Set Standards Can Enhance Performance, Morale

by James M. White



James M. White is currently associate professor in the industrial engineering department at Stevens Institute of Technology. He spent 10 years prior to the current appointment at McGill University in the same capacity. He has had fairly diversified experience in private industry and government and has published several pieces in professional journals. Degrees: C.P.A., University of Maryland, 1944; B. Eng., Johns Hopkins University, 1947; M.B.A. (management) New York University, 1949.



It was soon determined that, under certain conditions, the premium plan did contain a negative incentive to making changes. For example, if a methods change was introduced in such a way that productivity increased but total departmental output remained unchanged, then the effect of the improvement would be to reduce the man-hours required for a given amount of output. If the employees' average bonus earnings were not affected by the change—as ought to be the case—then the foreman's bonus earnings would be reduced because of the effect on his "intricacy" factor. Apart from this, a foreman might be led to condone wasteful practices if they resulted in high employee bonus earnings, since this would also increase his own bonus earnings. There would be a positive monetary incentive to make a change in operations only if the change promised to result in an increase either in the employees' incentive earnings or in the intricacy factor. It is unlikely that either of these outcomes would occur under normal conditions. Hence, a foreman might prefer to maintain the *status quo* for various reasons: a desire to be popular with his employees, a general dislike of change, fear of a decrease in prestige if his department became smaller, or others.

A Different Approach

The study disclosed an undue reliance on a technique that was faulty in concept and too limited in its scope. As a consequence, the foremen's incentive plan was eliminated and an appraisal of performance plan was installed in its place. The basic features of this appraisal system were 1) definition of the responsibilities of foremen for departmental performance 2) determination of the factors to be used as the basis for appraisal 3) determination of stand-

If SUPERVISORS are to participate more actively in the work of management, then authority must be decentralized to some extent. This, in turn, means that higher management must consider carefully how to do this and still retain the ultimate control and direction of the company. A key part of this problem is how to motivate supervisors to identify their interests more closely with top management's, since supervisors frequently feel a divided loyalty. Furthermore, it is essential that the authority and responsibility of supervisors be carefully defined, that adequate control systems be installed and made operative, and particularly that well-conceived means of appraising performance be instituted.

Case Study

Recently, the writer was hired by Company X to develop a foremen training program.* At the time, there was in effect an employees' incentive plan based upon time standards, and a foremen's incentive plan based upon a) the employees' average bonus earnings, and b) an "intricacy" factor which took into consideration such factors as the number of employees in a given department, the scope of the work, and the complexity of the operations.

In the course of developing the program, the question arose, "Did the foremen's premium plan operate so as to reduce rather than strengthen, the foreman's incentive for making improvements?"



* The work was done in one plant of a multi-plant company. Sales and general offices were located elsewhere so that the plant manager was primarily responsible for production. There were only two levels of management; the plant manager and his foremen.



ards of performance for these factors and 4) periodic ascertainment of actual performance levels which, when compared to the standards, would determine whether performance was satisfactory or unsatisfactory. The appraisal plan also stressed the fact that foremen, as part of the management team, had a responsibility for eliminating waste and for effecting improvements in operations.

The result was that foremen began to identify their interests with those of management. They gained a better understanding of management's problems, and they participated more actively in solving these problems. This improved teamwork brought about substantial improvements in operations.

To fulfill its role as an essential support for participation in management by supervisors, appraisal of performance must be broadly conceived. It should include both a review of departmental performance to determine in what respects it might be improved; and an attempt to account for the causes of unsatisfactory performance as a first step in taking corrective action. Appraisal of performance should be based on results accomplished and it should be as objective as possible.

Equating Supervisory Flaws to Poor Performance

When it comes to identifying weaknesses in supervisors that account for unsatisfactory performance, judgment is required. Here a systematic procedure may be helpful. For example, it may be thought that a foreman is relatively ineffective in some areas because of poor employee relations. In such a case, an assessment of the foreman's qualities could be made by rating from personal observation

such factors as personality traits, attitude toward the company, co-operation with other supervisors, and leadership qualities.

If management believes in continually searching for improvements, it should avoid setting standards that will encourage foremen to maintain the *status quo* and oppose changes. Standards are — or ought to be — set in such a way that performance is considered satisfactory if operating standards are met, given the presently existing conditions. If a substantial change occurs in any factor that affects performance, the standard should be modified accordingly. Hence, changes in standards can be used as indicators of improvements that have been made.

It is possible that performance might be considered satisfactory because standards are being met, and at the same time unsatisfactory because no improvements had been made.

Selecting the Significant Factors

It is clear that defining a foreman's responsibilities and deciding what factors are to be used in appraising his performance requires that a management make a detailed analysis to determine what elements in the production process are decisive. In the case of a production foreman, for example, responsibility for shop performance is commonly considered to be for the cost of the work done in the shop, the quality of the work, and for maintaining a predetermined rate of output.

But the analysis must be carried one step further to discover what are the important factors that affect performance and which are controllable by foremen. In the case of a line foreman, such factors as the following may justifiably be used in appraising his performance: productivity, incentive coverage, day work, waste, plant housekeeping, safety, lateness and absenteeism, labor turnover, labor grievances, idle time (of equipment), and delivery schedules. The number and value of operating improvements made may also be considered.

At the present stage of the art of management, there is no general agreement as to how to judge the various factors in appraising performance. Instead, each company must analyze its own problems and decide both which factors are to be considered and how they are to be judged. An analysis of direct labor cost follows as an example of a possible approach.

In most cases, direct labor is the most important single element of cost in a production shop. But the monetary cost of labor has no meaning unless the amount of work performed is also taken into consideration. For a given amount of work, the labor cost of that work is determined by rates of pay and the time taken to do the work. Line foremen rarely have any appreciable control over the factors that affect labor rates. However, they do exert influence over productivity, which determines the time required to do work, and particularly over pace, or rate of working, which is a factor that affects productivity.

Sometimes, as in the study referred to above, pace is largely controlled by means of a wage incentive system. A

monetary incentive sometimes is a sufficiently strong motivating force to cause workers to maintain productivity at a high level without much supervision.

Foreman's Responsibility for Productivity

With such an incentive, departmental performance can be measured in terms of average bonus earnings. According to a widely held view, average bonus earnings should average about 25 per cent of base earnings under normal conditions. If earnings are too large, this could be due to such causes as loose standards, cheating, a poor quality of workmanship. If earnings are too low, this might be due to inadequate training, poor planning of work, or the use of incorrect methods. The elimination of these defects is the foreman's responsibility.

Labor cost will also be affected by the extent to which work is covered by standards and by the time spent in non-productive activities, usually classified as "day work", if they can be identified. The day work classification ought not to include time spent on productive work for which time standards are not available. Hence, the factors of incentive coverage and day work should be considered in addition to departmental productivity performance.

It is important to note that a foreman who meets the more obvious requirements — such as those described above — may not necessarily be doing a fully adequate management job. An additional significant function of management is developing and using improvements.

Improving Operations as a Factor in Appraisal

The process of making improvements requires a) the analysis of areas where improvements are possible b) the setting of goals and c) the review of progress in meeting goals. Management ought to undertake from time to time some analysis of operations to determine where and how improvements could be made. A desirable state of affairs would be for management to have at least one improvement project under way at all times but to limit the number of such projects to avoid dissipating energies and doing a superficial job.

The selection of a project, the determination of the means to be employed in effecting an improvement, and the setting of goals for making improvements requires a co-operative effort on the part of the plant manager, the foremen involved, and staff personnel. It is not sufficient, for example, to announce that foremen must reduce the wastage losses by 50 per cent in their respective departments. A careful analysis must be made as to how wastage losses can be reduced. If it is decided that statistical control techniques are to be used in reducing and controlling wastage losses, a study of the causes and possible ways of eliminating these causes is essential to maximize the results of the program. Realistic goals can only be set if a thorough analysis is first undertaken.

By the same reasoning, a careful consideration of the problem should include a determination of the *rate* of improvement expected. If a project requires an appreciable amount of time, and if it relates to some aspect of shop

performance where responsibility for making improvements rests with the foremen, then appraisal of performance ought to include the progress made toward the final result.

Apart from such projects, miscellaneous suggestions may come from foremen, workers, or staff personnel. It might be well to consider a formal system for appraising the extent and value of all improvements arising from any source. This could be done by summarizing periodically the effects of improvements as reflected in standards changes, reduction in costs, or other ways in which operations are benefited. Another possibility would be to write up each improvement in some detail and to evaluate the benefits obtained for each department.

Key Role of Plant Manager

In developing and applying the type of appraisal plan discussed here, the plant manager obviously plays a key role. He is the one who must develop a clear and concise picture of what he expects of his foremen, and he is the one who must guide and direct them to meet their targets. He must work with his foremen to develop their abilities and overcome their weaknesses, help them solve their problems, motivate them to work to the limit of their abilities, and see that the proper tools are provided to help them meet their objectives.

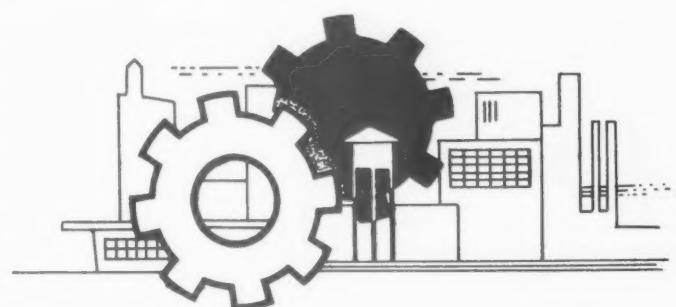
Furthermore, he must encourage them to develop their own improvements and to consider improvements suggested by others, as well as analyzing operations himself in quest of better methods.

Summary

This article assumes that supervisors should take a greater part in management and, therefore, that they must be given more authority. This in turn calls for clearer definitions of their accountability for job performance.

The author cited evidence to support his belief in the value of appraising performance as a sound way to bring about an improvement in the morale of foremen and an improvement in operating performance.

An effective appraisal system has the additional advantage of clarifying responsibilities and relationships and causing a better-balanced distribution of managerial effort. Moreover, basing appraisal, in part, on improvements causes the plant manager and line foremen to use staff services more effectively and tends to make line-staff relationships more co-operative.



Management Bookshelf



Review of

THE MEASURE OF MANAGEMENT, by Eliot D. Chapple and L. R. Sayles, N.Y.C., Macmillan, 1961; 214 pp., \$6.50

I like this book for the very human reason that I agree with much that the authors have stated, and because I wish that I had written it.

This book is broad in scope and concept and perhaps its 200-odd pages are inadequate to present an exposition of such significance. The chapter titles reveal its broad area of discussion:

"Work Flow" as the Basis for Organization Design

Production Standards for Managerial Design

Development and Use of Organizational Controls

Technological Determinants of Work-Group Behavior

The Man, The Job and the Organization

How Managers Can Evaluate Performance

The Impact of Organization on Employee Health

Morale: The Measure of Organizational Health

Union-Management Relations and Productivity

Alternative Approaches to Organizational Change

New Responsibilities for Executives

Topics Well-Knit

I feel that the authors are discussing several topics, each of which is worthy of more complete discussion. Yet, they have shown skill in relating them into a coordinated whole. It is possible that they have gone too far in posing as experts in several fields, such as psychiatry and psychology.

The authors claim that a "Work Flow System" applies to most management positions as well as it does to "rank and file" positions. It is their belief that corporate organization should be structured from the bottom up, rather than from the top down. Their arguments are convincing. Their case is persuasive for a revised type of job-description that relates to activities and not to responsibilities.

The authors attempt to analyze the behavior of work-groups. They suggest that supervision must be aware of the varying group types, such as the erratic, strategic, conservative and apathetic. Included is a

Review of

MODERN PRODUCTION MANAGEMENT, by Elwood S. Buffa, N.Y.C., John Wiley and Sons, Inc., 1961; 636 pp., \$10.25

This book is a well-organized approach to the subject of production management. It has special merit in introducing the reader to the technical aspects of the subject by easy stages. The book is divided into four parts: introduction, analytical methods, design of production systems, and operation and control of production systems.

The author has set as his purpose the integration of a great deal of material that has become available in this field so that the undergraduate student of production management might be able to grasp the fundamentals.

Sophisticated mathematical knowledge is not required for an understanding of the book, although a grasp of quantitative symbolic logic would help, especially in the later stages of the book where applications are described. Although directed to the undergraduate student, this book affords excellent as well as interesting reading for many operators, industrial engineers, market analysts, and economic forecasters.

'Both Sides of the Street'

A most ambitious goal has been set forth by the author; namely, concentrating on the economics of production as well as paying full attention to other collateral disciplines—personnel, human relations, management science, and industrial relations. At times, there is doubt that the author has been able successfully to bridge such a wide gap.

But, it is refreshing to find that the discussion of various technical forces, such as cost data, statistical analysis, design, layout and physical facilities, inventory, and quality

very perceptive analysis of work-group behavior which is important if one wants to understand motivation. The authors emphasize that the type of supervision must vary in accordance with the type of group.

Different Morale Concept

In the chapter on "Morale—The Measure of Organizational Health", the authors make a cogent statement when they say, "High morale is not a neat function of the sum of the wage, job, supervision and working-condition satisfactions. A different conception of the meaning of "morale" is necessary before corrective techniques can be developed. These require dealing with the organization as a system of relationships and introducing the inter-action measurements by which it can be controlled".

While I do not believe that this book will become recognized as one of the classics in management literature, I feel confident that it will make a positive contribution to management thought.

A. V. MacCULLOUGH,
A. V. MacCullough Associates, Rye, N. Y.

control, is couched in an economic framework of a highly respectable nature. The author always leaves the reader with the impression that the solution to a problem involves more than technical knowledge alone. If for no other reason, modern managers should find the book stimulating.

The physical organization of the book is helpful if it is to be used as a textbook—including as it does summaries, review questions, and further references. However, it is possible that the less academically inclined reader might find this arrangement, as well as some of the style of writing, a little boring.

Over-all Feeling

Although there are many valuable case and illustrations presented, there is the danger that the explanations are not always clear and that the reader may be lost in a maze of too many illustrations. It is suggested that the reader not attempt to read too much of the book at one sitting. It definitely is a textbook, highly informative but not for the recreational reading. It has the possibility of being a valuable addition to a manager's bookshelf, serving as a handy reference volume.

REUBEN E. SLESINGER,
Professor of Economics, University of Pittsburgh

Review of

AMERICAN MANAGEMENT ABROAD, by George D. Bryson, N.Y.C., Harper & Brothers, 1961; 240 pp., \$5.00

This is a much-needed work in the field of international management. While there are several good books of recent vintage on the subject, this is the "first" by a successful practitioner. The book is seasoned well with wide experience and flavored nicely with a sincere overseas business executive philosophy.

The work was stimulated by a desire to inform "top executives and ambitious young business men in the United States of the challenges in foreign operations and the unparalleled opportunity international management offers for on-the-ground training for the highest posts of corporate responsibility".

This is important. More and more, we are beginning to see that we are lacking not in managerial talent, but in its effective use. A way to overcome this weakness lies in the molding and development of executives through overseas operations.

Wisdom to Fill Void

The author achieves his objective to "provide some guidelines for men going into overseas management jobs". A significant void is filled with practical wisdom. This book should inculcate in other international executives an enthusiasm to set down their thoughts for the education of oncoming foreign managers.

The author presents a full array of topics on overseasmanship, including the qualifications and preparation of the foreign manager, building a management team, how to get along with headquarters, and personal hints for the foreign manager extending from problems of entertaining to the length of overseas duty.

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Provocative Letter-to-Editor Department—

Controversy over Article, 'The Corporation and The Modern Novel', Sputters on Delayed-Action 'Fuse'

(*Editors' Note:* Robert Hays' article, "The Corporation and the Modern Novel" [AM, Jan. '61, p. 4], so far has prompted two vehement responses from readers. Both dissenting letters are lengthy, and erudite over-all. The first appeared on the heels of the article [AM, Feb. '61, p. 26]; herewith — via delayed-action "fuse" — is the second:)

Editor,
ADVANCED MANAGEMENT Magazine
Society for the Advancement
of Management
74 Fifth Avenue
New York, N.Y.

Sirs:

The December 1960 issue of your magazine has, by devious routes, recently come into my hands, and I cannot resist a reply to your lead article, "The Corporation and the Modern Novel."

Since Mr. Hays heads an English Department, and since I am a teacher of English, I feel there is a common ground upon which I may disagree with him. . . .

In the first place, Mr. Hays confuses the nature of the novel by referring only to those which exhibit peculiar aberrations of some American writers. The novel in its literary sense does not demand the type of conflict he imagines; rather, it is a presentation of an individual human being, a solid representative of the middle class, in the midst of his environment. As witnesses I call forth Jane Austen, Ford Mattox Ford, George Eliot, and, in America, William Faulkner and James Gould Cozzens.

It is here, in true novels (and it should be noted that all novels are "modern": there

(from preceding page)

This book is not a technical treatise; it does not tell you how to design an overseas venture; it does not deal with the intricacies of administration and organization in an international division; it is not an appraisal framework for international business activities.

Developing Proper Orientation

Instead, it is a first-rate means by which aspiring managers can gain insights, a frame of reference, and proper attitudes for the management of foreign operations. Along the way, the author drops delightful, yet poignant illustrations and case histories. Also, he offers homely, yet worthwhile shortcuts on such matters as local currency conversion and metric measurements.

Corporate and international executives will encourage foreign managers to use the know-how of this excellent manual, with its high-purpose, yet practical guidelines. The business administration educator will consider the adoption of this work as a worthy "primer" for graduate student seminars in foreign management.

EDWARD G. KOCH,
Professor of Business Administration, Graduate School of Business Administration, University of California at Los Angeles

JULY-AUGUST, 1961

is no such thing as a medieval novel), that one finds the true nature of the novel. The novel has never demanded the conflict of man and man or man and things that Mr. Hays somehow deduces from his unusual list.

Mr. Hays' second confusion is his equation of social and political leaders with the characters of a novel. The man who determines the direction of his society is a likely hero for an epic. The man who is himself directed by his environment is the central character ("hero" is misleading) of a novel.

All unawares, Mr. Hays bemoans the loss to modern fiction of an epic hero: the members of the Beef Trust, Babbitt, Cowperwood, Stahr, Harriman, Rockefeller. Even in his complaint that the modern industrial hero is no longer free to do good or evil ("The correction of social and economic abuses has fettered the free-wheeling abusers"), Mr. Hays shows a remarkable ignorance of the plethora of abuses of which the steel and electric industries are but inklings.

Mr. Hays' description of "the fictional hero" is patently a description of a Shakespearean or Homeric hero: "The evil genius could not plant seeds of his own destruction; and even if he did, his denouement, brought on by a tragic flaw, would be a rippling eddy, not a tidal wave."

The novel is not in the least interested in this tragic, epic hero. The characters of a novel are determined by their environment, and the imitation of their actions, which is the novel, is an attempt to imitate, not the heroic figure, but the environment itself. . . .

If the modern man of business is no longer a subject for the novel, it is not because he has lost his epic, heroic stature, which he never had, but rather because he has lost his membership in humanity. The members of this order perform no significant human acts, however trivial. They have become so depersonalized as to resemble contented animals—even the guilty (witness the latest corporation trials) are bland, faceless, and cause not the slightest personal interest. . . .

I have carried my notes on your article to such lengths because I fear that it gives a distorted picture of the novel, and more important, of the American novel, a sickly child which, if subjected much longer to the abuse it has so far received, will never reach adolescence.

Sincerely,
EDWARD G. WINNER

143-A Longstreet Drive
Smyrna, Tennessee



MODERN PRODUCTION MANAGEMENT

By E. S. BUFFA, Univ. of California. Integrates much of the new material from operations research, management science, and industrial engineering into an understandable — but not oversimplified — treatment. 1961. 623 pages. \$10.25

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VOLUME I

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Use of Teaching Machine Idea Bids Fair to Revolutionize Job Training

A learning system that has taught pigeons to play ping pong may revolutionize job training in the U.S.

Industrial Relations News (IRN), reported recently in its weekly newsletter for the industrial relations/personnel field that—along "teaching machine" lines—the new system, called "programmed learning," is based on breaking down the material to be learned in a series of tiny, progressive steps, or "frames". A reward is forthcoming to the student as he successfully completes each step (see box).

The reward, in the case of pigeons, is a kernel of corn. Humans are satisfied by quickly being told whether their answers to questions following each learning step are correct. Actually, each frame in a programmed course is designed as a question, deliberately made easy to answer.

Although hardly out of the experimental stage, IRN's editors report, programmed learning is attracting widespread attention in training circles. A number of large companies, such as International Business Machines, Inc., N.Y.C., and Polaroid Corp., Cambridge, Mass., have already conducted extensive pilot studies of its effectiveness.

"Clearly," says the newsletter, "the first stages of a revolution in job training methods is under way."

Supersedes Conventional Training

IBM used programming in a course on data processing for men who service their complex record-keeping equipment. The experimental group studied by itself, using a text in which the information to be learned was broken down into 719 steps. Another group studied under instructors in conventional lecture-discussion classes, with standard text material.

The experimental group completed their work in 11 hours, compared with 15 hours for the men studying conventionally. What's more, the group's members did far better on the final exams, as well.

Bell Telephone Laboratories, Inc., Murray Hill, N. J., is experimenting with a program to teach basic electricity to its employees. A major oil company plans to teach higher mathematics to its research staff. Eastman Kodak Co., Rochester, N. Y., is working on programs to teach economic theory, photography and industrial relations. Polaroid is offering employees programmed courses ranging from foreign languages to engineering and quality control.

Availability of 'Teaching' Devices

Some courses have been printed and published in books. A few of these unusual self-instruction books are available in bookstores, and cover a number of subjects, not all of them concerned with business. One programmed text which has achieved some popularity is *The Elements of Bridge*, by Bridge Champion Charles H. Goren (Dou-

bleday & Co., Garden City, N. Y., 420 pp. \$3.95).

IRN predicts programmed learning likely to radically change the process of education in the U.S., in schools as well as in plants and offices. Some 20 companies are scrambling to get into the business of making and selling machines to aid in courses of programmed instruction.

A few concerns, such as the Grolier Society, Inc., and U.S. Industries, Inc., have

How Learning Is Reinforced

In its most popular form, according to Industrial Relations News, a programmed course consists of hundreds of questions, each covering a tiny unit—or "frame"—of the material to be learned. Some samples:

1. There are certain plant-like organisms that can cause disease. The one we're studying here is called a fungus. So we can say that one type of plant-like organism which can cause disease is called a _____.
2. A fungus is a _____-like organism that can cause a disease.
3. Just as the plural of alumnus is alumni, so the plural of fungus is _____.

Whether the series is printed in textbook form, or run through a machine, only one question at a time is exposed by the student. When he completes his answer, he turns the page or activates the machine so the first question disappears. This brings him the correct answer at the same time it turns up the next question.

There are no trick or catch questions. Each one is designed to help the student get the right answer. He works at his own pace. There's no advantage in hurrying.

Another school of programmers bases its approach on large chunks of information followed by multiple choice questions. The right answer permits the student to move on to the next question; an error sends him to a frame explaining his mistake.

of N.Y.C., have already launched full-scale marketing campaigns.

Many experts favor the use of machines in programmed learning. Generally, the machine presents one frame at a time to the student, and mechanically feeds back information to correct his errors or confirm that he's on the right track.

The Grolier machine, the Min/Max, is hand-operated, typewriter-size box weighing about 7½ pounds, whereas U.S. Industries has available its AutoTutor Mark II. This is an electrically run, push-button machine that can handle up to 5,000 microfilm program frames.

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✓-List For Future Events

- Aug. 20-23, 1961 1st International Congress on Ergonomics, Federation of Swedish Industries, Stockholm
- Aug. 23-26, 1961 8th Annual International Meeting of The Institute of Management Sciences (TIMS), Brussels, Belgium
- Sept. 18-23, 1961 6th Annual Midwest Work Course on Plant Layout & Facilities Planning, University of Kansas, Town House Hotel, Kansas City, Kans.
- Sept. 21-22, 1961 Industrial Electronic Symposium, sponsored by American Institute of Electrical Engineers, Institute of Radio Engineers and the Instrument Society of America, Bradford Hotel, Boston
- Oct. 8-11, 1961 14th Annual International Systems Meeting, Cleveland, O.
- Oct. 10-12, 1961 American Standards Association's 12th National Conference on Standards, Rice Hotel, Houston, Tex.
- Feb. 13, 1962 First Indo-Pacific Management Conference, Manila (Philippines)

'One-Third of Present Job Titles Out by 1970; New Attitudes Towards Training, Job Designations Needed' — Miller; 'Most Hiring Methods Application Blanks Fail to Uncover Individuals' Best' — Haldane

Nearly a third of the job titles that exist today will be outmoded by scientific progress before 1970, according to Labor Dept. figures. Thousands of new job titles will be created and millions of people will be employed at these new types of jobs. Men and women must be ready to adapt their talents to meet these changing conditions and requirements. A new manpower technology and new attitudes towards training, education and job titles will be needed if serious unemployment is to be avoided and prosperity maintained and increased. This theme was recently sounded by Arthur J. Miller, business manager of the nuclear division of Combustion Engineering Corp., who originally introduced Bernard Haldane and Success Factor Analysis to industry leaders at the career development sessions of the American Management Association in 1958.

Success Factor Analysis, according to its developer, Bernard Haldane, is a new means of identifying a man's or youth's best qualifications, regardless of his educational or other background. In addition, S.F.A. reveals the kind of power a person puts behind his different talents — how he is motivated. "While it is true that we need a better educated citizenry, it is even more true that we need better motivated individuals in business, industry, the professions and all occupations," said Mr. Haldane at a recent business seminar sponsored jointly by the New York

Chapter of S.A.M. and the New York Herald-Tribune.

"Instead of this worship of failure and mediocrity," he said, "we need to develop fellowship of excellence. This calls first for realization of the opportunities being missed by companies and the nation as a result of prevailing methods; and second, for radical change in our approaches to manpower utilization so that men become self-motivated in their best more consistently."

"Studies financed by the Ford Foundation, the Grant Foundation and others have proved that hiring methods in general today are not good enough," states Mr. Haldane.

"Almost everyone with talent intensely dislikes job applications in their present form," commented Mr. Haldane. "The applications usually prevent a person from putting his best foot forward and give little indication of his talents, potentialities and self-education. Present job applications are perfect 'out' for mediocre interviewers who don't want to take chances. Progress requires taking calculated risks. Opportunity is partner to risk."

Mr. Haldane noted also that his job application permits any applicant to show his talents and potentialities to an employer. In this way, it places the responsibility in judgment and selection on the new employer, rather than on the previous one who might have made a mistake.

Editor's note: It has been brought to our attention that both applicants and interviewers must be oriented to this application form. The Haldane-designed application blanks are available. Write in care of ADVANCED MANAGEMENT, 74 Fifth Avenue, N.Y.C. 11, enclosing a long (#10) self-addressed envelope bearing 8¢ postage for each set of 7 or fraction thereof requested.

Female Office Forces Surveyed

W. T. Cavanaugh, executive director of the National Office Management Assn., has announced that the association has recently completed a survey on women in business, instituted because of its interest in the anticipated change in the composition of the labor force in the United States and Canada within the next 10 years. This survey was conducted among more than 1,900 business, industrial and service organizations from the United States and Canada.

The major conclusion of this report, Mr. Cavanaugh indicated, is that the largest untapped source of manpower in the United States is womanpower, and that if the emerging requirements for highly educated people of a supervisory kind are to be met, industry must tap this source more thoroughly than ever before.

The Association maintains World Headquarters at 1927 Old York Rd., Willow Grove, Pa.

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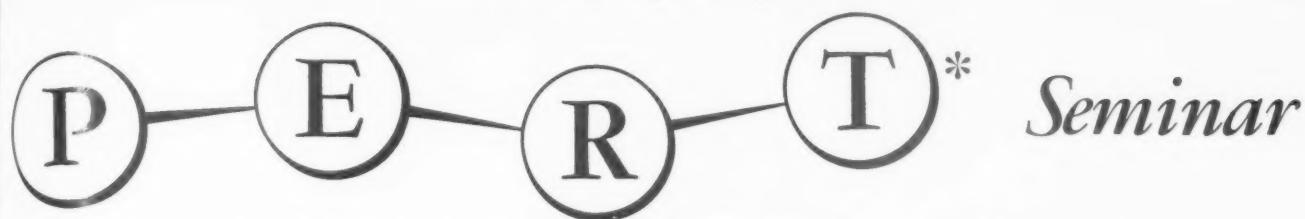
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U.N. Recruits Management

Vacancies extant in United Nations Technical Assistance Program of top-functional-, and middle-management interest, and for which recruitment is required, were announced recently by the Technical Assistance Recruitment Services, United Nations, N.Y.C. 17, or *Bureau européen de Recrutement pour l'Assistance Technique, 36 Rue La Pérouse, Paris XVI, France*. The duration of post in months and expiration date of recruitment are shown after the name of the country. "Ext." means that recruitment is being continued beyond the expiration date.

POST NUMBER	COUNTRY	DURATION	DATE OF ISSUE	DEADLINE	POST TITLE
Economic Surveys					
OOA	Ecuador	18	27. 3.61	Ext.	Implementation of econ. devel. plans
OOA	Iraq	12	7.10.60	Ext.	Economic adviser (appt. to be made in Oct. 1961)
OOA	Turkey	24	10. 3.61	Ext.	Economist for State Planning Organization
OOA	Spain	6	25.11.60	Ext.	National economic planning
OOA	Upper Volta	18	20. 3.61	Ext.	Economist (regional planning)
OOB	Turkey	24	10. 4.61	Ext.	National accounts (state planning organization)
OOD	Chile	12	20. 2.61	Ext.	Financing of economic development
OOG	L. America	22	27. 3.61	Ext.	Economist (tariff equalization and common markets)
Industrial Development and Productivity					
10C	Guatemala (ICAITI)	12	31.10.60	Ext.	Chief, Industrial Economic Division
11CC/R.1	Guatemala	12	19. 6.61	11. 8.61	Industrial economist
	India	12	3. 2.61	Ext.	Chemical engr. (petro-chem. and natural gas)
11N	Philippines	6	16. 7.59	Ext.	Bamboo-craft — Home industries
12B	Burma	12	23. 9.60	Ext.	Industrial investment adviser
12H	Ceylon	12	12. 7.60	Ext.	Indust. management training adviser
12I	Iraq	12	31.10.60	Ext.	Industrial planning
12S/R.2 (ex-12BB)	India	6	25.10.60	Ext.	Mfg. of carbon electrodes
16F	Chile	6	22. 5.61	30.11.61	Chemical engr. (petrochemicals) (appt. to be made in April 1962)
16J (OPEX)	Pakistan	12	10. 4.61	Ext.	Production Mgr., Penicillin factory
17EE	India	6	19. 4.60	Ext.	Sack kraft manufacture
16V	India	24	25.11.60	Ext.	Production Mgr. (chemical process ind.)
19GG	India	12	22. 8.60	Ext.	Chemical engr. (preventative maintenance in chemical industry)
19HH	India	12	22. 8.60	Ext.	Engr. (prevent. maintenance in metallurgical industry)
20A	Dahomey	6	10. 3.61	Ext.	Chemical engr. for cement production
20A (OPEX)	Paraguay	12	20. 3.61	Ext.	Chief of product., Portland Cement plant
21D	Chile	6	22. 5.61	30.11.61	Shipyards planning (appt. in April 1962)
21I	India	12	25.11.60	Ext.	Fountain pen mfg. expt. (appt. in 1962)
21NN	India	12	16.12.60	Ext.	Testing and servicing of laboratory and scientific equipment
29A	Nigeria	4	20. 2.61	Ext.	Indust. engr. or econ. (indust. estates)
Trade Promotion and Marketing					
40C	Mexico	6	26. 6.61	18. 8.61	Tourism (market analysis and statist.)
Public Finance					
41A	Somalia	12	21.10.60	Ext.	Public finance adviser
41A (OPEX)	Togo	12	26. 8.60	Ext.	Treasury Director
41B	Cameroons	6	20. 3.61	Ext.	Public finance (fiscal policy)
41F	Somalia	12	21.10.60	Ext.	International finance officer
Transport and Communications					
48A (OPEX)	Nigeria	12	20. 2.61	Ext.	Chief statistician, Director, Federal Office of Statistics
48D	India	12	26. 5.61	30. 9.61	Economist or statistician (input-output analysis) (appt. in Jan. 1962)
Statistics					
54C	Israel	6	2. 9.60	Ext.	Port operations
Public Administration					
81B	Cameroons	12	20. 3.61	Ext.	Teaching of economics
81G	L. America	3	29. 5.61	Urgent	Seminar adv. (highways admin.)
83 (OOD)	UAR/Egypt	3	6. 2.61	Ext.	Budget planning and control
83B/R.1	Panama	12	25. 5.60	Ext.	Public finance administration

Wallace Clark Award Presented To Joseph James Cussen

Joseph James Cussen of Santiago de Chile was recently awarded the Wallace Clark International Management Medal for 1961 at the Third Inter-American Management Conference, Mexico City, March 11. The award, established in memory of Wallace Clark, was given to Mr. Cussen "for distinguished contributions to scientific management in the international field". Mr. Cussen has been associated for more than 30 years with the American and Foreign Power Co. has taken an active part in several management societies of the Americas, and was one of the founders of the Pan American Council of CIOS.

* * *

Phil Carroll was initiated into Tau Beta Pi at University of Michigan on April 18, 1961. Also, Mr. Carroll was appointed chairman of the executive committee of the general engineering department, one of four groups of American Society of Mechanical Engineers divisions recently formed to bring about better coverage and collaboration in programming related topics of member interests. In addition, he was recently made a member of the advisory committee for the industrial engineering department of Newark College of Engineering.

* * *

John T. Diebold, S.A.M. member and president of The Diebold Group, international management consulting organization was awarded honorary membership recently in the City College of N.Y. Bernard M. Baruch School Beta Chapter of Mu Gamma Tau, national honorary fraternity in industrial, personnel, and traffic management.

Author of the book, *Automation*, and lately a member of the Secretary of Labor's Committee on Manpower and Automation, Mr. Diebold was cited for "his outstanding contributions to business and government."

Last year, Dr. Ordway Tead, member of the editorial advisory board of *ADVANCED MANAGEMENT*, and vice president of Harper and Bros., was awarded honorary membership in the management fraternity.

* * *

The Northern New Jersey Chapter presented the S.A.M. key as a special award to Louis J. Bovasso of Jersey City, N.J., at Commencement Exercises of the Newark College of Engineering. Mr. Bovasso also received a B.S. degree in mechanical engineering.

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University Division News

by President Harold Fischer

Careers in Business was the theme of a seminar sponsored by the Western Reserve University Chapter. The stated purpose of this seminar was to acquaint high school seniors with the opportunities in the different fields of business administration as well as to advance the name of S.A.M. and the Western Reserve School of Business. Forty high schools in the greater Cleveland area were invited to send representatives along with the students who had been accepted to the school of business for Sept. 1961. The evaluation reports that were made by those in attendance revealed 1) The program was well planned and executed; 2) It was helpful and beneficial; 3) A desire to have it as an annual affair.

The dean of the school of business, Dr. W. K. Dolva, opened the program and 12 business executives participated in the all day workshops with 3 seminars running concurrently during the day. The morning sessions included accounting, advertising, statistics, banking and credit, sales management, and office administration; whereas the afternoon sessions took up economics, finance, industrial relations, production management, marketing research, and real estate and insurance.

Congratulations to the President Richard R. Neiger, Professor Albert C. Henlein, faculty advisor, and members for a truly outstanding job. The seminar was a real service to the incoming students of the University. As stated by the committee, "We hope that the success of our efforts will only be surpassed by your accomplishments in your chosen field."

The active Dana College Chapter has been interested in the industrial development of their state, Nebraska. As a result, they sponsored an interesting Seminar in which the various factors affecting business location and development, particularly as they applied to Nebraska, were thoroughly examined. Hats off to Professor Clois Coon, faculty advisor; Lonnie Hayne, president, and the members of the conference committee for a job well done!

The Indiana University Chapter selected "Modern Human Relations in Business" as the theme for their Annual Spring Clinic. Talks during the afternoon by three business executives were followed by dinner and a panel discussion in the evening with discussion leaders from industry, education, and organized labor. Professor Tom Bossart, jr., faculty advisor; Richard C. Thompson, president, and the members of the committee continue the forward movement of the chapter.

Lamar State College of Technology held

their Fourth Annual Advanced Management Conference in the form of an all-day Executive Development Workshop — "Enlarging Managerial Capacity — The Core of Executive Development." As usual, the workshop was attended by business executives of the area along with members of the chapter. Dr. R. O. Bennett, jr., faculty advisor; Jimmy Davis, president, and members of the chapter committee are to be commended for another great program!

More than 800 representatives from more than 250 business firms were reported present at the Third Annual Achievement Banquet of the Division of Business at San Jose State College. The S.A.M. chapter was recognized for its program and its outstanding growth in membership. Faculty Advisor Jack H. Holland, reports that the banquet originated with the S.A.M. Chapter. The student chairman is an active S.A.M. member and most of the work on the planning of the dinner was done by the chapter.

Dr. Robert C. Anderson, executive vice president, Auburn University, opened the Annual Management Conference of the Auburn University Chapter. The theme this year was "Cost Control Through the Use of Electronic Computers." Business executives and members of the chapter combined to make this another successful venture and another service by the chapter to the University and to the business interests of the region. Congratulations to Professor Charles N. Cobb, faculty advisor, and the young men for an accomplished job.

The Northeastern University Chapter honored one of its members, Arthur Chisholm, for having been named to the All-American Hockey Team for the past three

years. Nice going, Arthur — S.A.M.ers are outstanding in many areas of activity.

We welcome University College, the Evening Division of Loyola University of Chicago, into our growing family of University Chapters. Robert Boden, university chapter co-ordinator, of the Chicago Senior Chapter, presented the charter at a recent meeting to Robert McCulla, president of the new group. Professor Eugene Kamy, faculty advisor, formally installed the new student officers. Participating in the program were Dr. Richard A. Matré, dean of University College and John P. Donohue, assistant to the dean, as well as Carl Hazelbauer, the incoming university co-ordinator of the Chicago Chapter. A special scroll and S.A.M. membership button were presented by the president to Mr. Donohue for his continuing help in the development of the chapter. The spirit of the members of this new chapter was revealed in the statement of the president when he said: "Loyola's new chapter will be heard from on a national level when competition resumes in the fall of '61. We expect great things from them."

Congratulations to the newly established Anderson College chapter! They believe in action — the first post-graduate membership application this spring was received from a graduating senior within one week after the chapter received its charter from Carl B. Genrich, jr., of the Indianapolis Senior Chapter.

Many thanks to the hundreds of S.A.M.ers everywhere who helped to make this another year of achievement in the University Division. More than 12,200 members of our University Chapters understand "the future belongs to those who prepare for it."

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Results of the Second Report

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St. Norbert College	3840	Quinnipiac College	1800
Louisiana State University	3805	Rutgers Univ. of So. Jersey	1740
University of Pittsburgh	3720	Arizona State Univ.	1700
Santa Maria Catholic Univ. of Puerto Rico	3610	Univ. of Southwestern La.	1565
Loyola Univ. of Chicago	3600	Bowling Green State Univ.	1555
Ohio University	3510	Pennsylvania State Univ.	1550
Univ. of Scranton	3480	Mich. College of Mining & Tech.	1535
New York University - Commerce Eve. Div.	3455	Illinois Inst. of Tech.	1530
Los Angeles State College	3400	Univ. of Cincinnati	1520
Georgetown University	3360	Temple Univ. - Day Div.	1500
Univ. of Mississippi	3335	Dana College	1445
Auburn University	3300	Univ. of Alabama	1400
University of Maryland	3270	Univ. of Illinois	1390
San Diego State College	3265	Univ. of North Dakota	1385
Rider College	3240	Univ. of Minnesota	1365
DePaul University	3070	George Washington Univ.	1295
Kent State University	2970	Butler Univ.	1230
Clarkson College of Tech.	2960	Atlanta University	1220
Lamar Inst. of Tech.	2885	St. Louis Univ.	1180
Purdue University	2820	Boston University	1135
American University	2810	Temple Univ. - Eve. Div.	1055
Loyola College of Montreal	2770	Univ. of Houston	1055
Babson Institute	2740	Univ. of Detroit	1040
San Jose State College	2710	Univ. of Baltimore	1030
Indiana University	2630	Univ. of Texas	905
Univ. of Chattanooga	2560	Suffolk University	860
Georgia Inst. of Tech.	2550	Oklahoma State Univ.	820
Duquesne University	2510	Univ. of Connecticut	805
Memphis State Univ.	2490	Univ. of Florida	780
Univ. of Omaha	2460	Cornell Univ.	765
Rochester Inst. of Tech.	2435	Univ. of Michigan	755
Long Beach State College	2385	Washington State Univ.	700
Mississippi State Univ.	2380	Western Reserve Univ.	690
Univ. of Oklahoma	2330	Univ. of Pennsylvania	660
Univ. of Wisconsin - Milwaukee	2320	Univ. of Richmond	650
Franklin & Marshall College	2315	Univ. of Washington	650
Western Carolina College	2295	C. W. Post College - Day Div.	645
Lynchburg College	2260	Drake Univ.	640
St. Joseph's College - Day Div.	2215	Pennsylvania Military Col.	530
East Carolina College	2210	Univ. of Missouri	510
College of William & Mary	2135	North Texas State College	480
Xavier University	2120	Clark University	430
W. Va. Inst. of Tech.	2115	Drexel Inst. of Tech. - Day	425
Univ. of Arkansas	2055	Fairfield University	400
Boston College	2000	Wayne State Univ.	400
		Ohio State University	350

"The Fifth Estate . . . is composed of those having the simplicity to wonder, the ability to question, the power to generalize, the capacity to apply. It is in short, the company of thinkers, workers, expounders, and practitioners upon which the world is absolutely dependent for the preservation and advancement of that organized knowledge we call 'Science'."

—from "The Fifth Estate," an address delivered by Arthur Dehon Little at the Centenary Celebration of the founding of the Franklin Institute, Philadelphia, September 19, 1924.

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